A PLURALITY OF Worlds.

Written in *French* by the Author of the *Dialogues of the Dead*.

Translated into *English*

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THE PREFACE.

MY Case is much like Cicero's *when he undertook to write of Philosophy, in Latin; there being then no Books upon that Subject, but what were written in Greek: When some told* Cicero, *that he would take pains to no purpose, because such as studied Philosophy, would make use of Greek Authors, and not read Latin Books, which treated of it but at second hand; and others, who were no admirers of the Science, would never trouble their Heads, with either Greek or Latin.* Cicero *reply'd, they were much mistaken; for, said he, the great ease People will find in reading Latin Books, will tempt those to be Philosophers who are none; and*

they who already are Philosophers, by reading Greek Books, will be very glad to see how Philosophy is handled in Latin.

Cicero *might with good reason answer as he did, because the excellency of his Genius, and the great Reputation he had acquired, warranted the success of all he wrote: But in a Design, not much unlike his, I am far from having those grounds of Confidence which he had. My purpose is to discourse of Philosophy, but not in a Philosophical manner; and to raise it to such a pitch, that it shall not be too dry and insipid a Subject to please Gentlemen; nor too mean and trifling to entertain Scholars. Should I be told, (as Cicero was) that such a Discourse as this, would not please the Learned, because it can teach them nothing, nor the Illiterate, because they will have no mind to learn; I will not answer as he did, It may be endeavouring to please every Body, I have pleas'd no Body: to keep the middle betwixt two Extreams, is difficult; and I believe I shall never desire to put my self a second time to the like trouble.*

If

If this Book have the luck to be read, I declare to those who have any knowledge of natural Philosophy, that I do not pretend to instruct, but only to divert them, by presenting to their view, in a gay and pleasing Dress, that which they already know; but they to whom the Subject is new, may be both diverted and instructed: The first will act contrary to my intention, if they look for Profit, and the second if they seek for nothing but Pleasure.

I have chosen that part of Philosophy which is most like to excite Curiosity; for what can more concern us, than to know how this World which we inhabit, is made; and whether there be any other Worlds like it, which are also inhabited as this is? They who have any thoughts to lose, may throw them away upon such Subjects as this; but I suppose they who can spend their time better, will not be at so vain and fruitless an expence.

In these Discourses, I have introduc'd a Woman, to be instructed in things of which

she never heard; and I have made use of this Fiction, to render the Book the more acceptable, and to give encouragement to Ladies, by the Example of one of their own Sex, who without any supernatural parts, or tincture of Learning, understands what is said to her; and without any confusion, rightly apprehends what Vortex's and other Worlds are: And why may not there be a Woman like this imaginary Countess? since her Conceptions are no other than such as she could not chuse but have?

To penetrate into things either obscure in themselves, or but darkly expres'd, requires deep Meditation, and earnest Application of the Mind; but here, nothing more is requisite than to read, and to print an Idea of what is read, in the Fancy which will certainly be clear enough. I shall desire no more of the fair Ladies, than that they will read this System of Philosophy, with the same application that they do a Romance or a Novel. 'Tis true, that the Ideas of this Book are less familiar to most Ladies, than those of Romances

mances are, but they are not more obscure; for at most, twice or thrice thinking, will render 'em very perspicuous.

I have not compos'd an airy System, which hath no foundation at all: I have made use of some true Philosophical Arguments, and of as many as I thought necessary; but it falls out very luckily in this Subject, that the Physical Ideas are in themselves very diverting; and as they convince and satisfie Reason, so at the same time they present to the Imagination a Spectacle, which looks as if it were made on purpose to please it.

When I meet with any Fragments which are not of this kind, I put them into some pretty strange dress; Virgil *hath done the like in his* Georgicks, *when his Subject is very dry, he adorns it with pleasant digressions:* Ovid *hath done the same in his* Art of Loving; *and tho' his Subject be of it self very pleasing, yet he thought it tedious to talk of nothing but Love. My Subject hath more need of digressions*

than

than his, yet I have made use of 'em very sparingly and of such only, as the natural liberty of Conversation allows; the greatest part of 'em are in the beginning of the Book, because the mind cannot at first be so well acquainted with the principal Ideas which are presented to it; they are taken from the Subject it self, or are as near to it as is possible.

I have fancy'd nothing concerning the Inhabitants of the many Worlds, which is wholly fabulous; I have said all that can be reasonably thought of them, and the Visions which I have added, have some real foundation; what is true, and what is false, are mingled together, but so as to be easily distinguished: I will not undertake to justifie so fantastical and odd a Composition, that is the principal point of the work, and for which I can give no very good reason.

There remains no more to be said in this Preface; but to a sort of People who perhaps will not be easily satisfy'd; not but that I have good reasons to give 'em, but because

because the best that can be given, will not content 'em; they are those scrupulous Persons, who imagine, that the placing Inhabitants any where, but upon the Earth, will prove dangerous to Religion: I know how exceſſively tender some are in Religious Matters, and therefore I am very unwilling to give any offence in what I publiſh to People, whoſe opinion is contrary to that I maintain: But Religion can receive no prejudice by my Syſtem, which fills an infinity of Worlds with Inhabitants, if a little errour of the Imagination be but rectify'd. When 'tis ſaid the Moon is inhabited, ſome preſently fancy that there are ſuch Men, there, as we are; and Church-Men, without any more ado, think him an Atheiſt, who is of that opinion. None of Adam's Poſterity ever travel'd ſo far as the Moon, nor were any Colonies ever ſent thither; the Men then that are in the Moon, are not the Sons of Adam: And here again Theology would be puzled, if there ſhould be Men any where, that never deſcended from him. To ſay no more, this is the great

difficulty

difficulty to which all others may be reduced. To clear it by a larger explanation, I must make use of terms which deserve greater respect, than to be put into a Pamphlet, so trivial, and so far from being serious as this is; but perhaps there is no need of answering the Objection, for it concerns no body but the Men in the Moon; and I never yet said there are Men there; if any ask, what the Inhabitants there are, if they be not Men? All I can say, is, that I never saw them; and 'tis not because I have seen 'em, that I speak of 'em: Let none now think that I say there are no Men in the Moon, purposely to avoid the Objection made against me; for it appears 'tis impossible there should be any Men there, according to that Idea I have fram'd of that infinite diversity and variety, which is to be observed in the works of Nature; This Idea runs through the whole Body, and cannot be contradicted by every Philosopher: And to think there may be more Worlds than one, is neither against Reason, or Scripture. If God glo-

rify'd

rify'd himself in making one World, the more Worlds he made, the greater must be his Glory: But I do not declare these Ideas to be Articles of my Faith; when I do, I hope I shall have the same Liberty as the rest of my Neighbours.

Richard Kendall his Book

may: yᵈ 10: 1718

A Draheir Ladnek

A PLURALITY OF Worlds.

YOU would have me, Sir, give you an exact account, how I pass'd my time in the Country, at the Countess of *D* — —'s, Are you sensible such an exact Account will amount to a Volume? Nay (what is worse,) a Volume of Philosophy? I know you expect another kind of Entertainment, Dancing, Gaming, Hunting, *&c.* but you must take up with *Vortex*'s, Planets, and New Worlds, these were the Subject of our Conversation. And by good luck you are a

Philosopher, so that it will be no great disappointment, nay, I fancy, you will be pleas'd, that I have brought over the Countess to our Party, we could not have gain'd a more considerable Person, for Youth and Beauty are ever inestimable; If Wisdom would appear with success to Mankind, Do you think she would not do well to take upon her the Person of the Countess? And yet was her Company but half so agreeable, all the World would run mad after Wisdom: But tho' I tell you all the Discourse I had with the Lady, you must not expect Miracles from me. It is impossible without her Wit, to express but what she said, in the same manner she spake it: For my part, I think her very Learned, from the great disposition she hath to Learning. Is it a poring upon Books that makes a man of understanding? I know many that have done nothing else, and yet I fancy are not one tittle the Wiser: But perhaps you expect, before I enter upon my Subject, I should describe the Lady's house, with all its Situation,

tion, many great Palaces have been turned inside outward upon far less occasion: But I intend to save you and my self that labour, let it suffice, that I tell you, I found no Company with the Countess, and I was not at all displeas'd with it; the two first days drain'd me of all the News I brought from *London*, what I now send you is the rest of our Conversation, which I will divide into so many parts, as we were Evenings together.

The First Evening.

WE went one Evening after Supper, to walk in the Park, the Air was extremely refreshing, because that day had been very hot; the Moon had been up about an hour, and as she shone between the Trees, made an agreeable mixture of Light and Darkness; the Stars were in all their Glory, and not a Cloud appear'd on the Azure Sky; I was

muſing on this awful Proſpect, but who can think long of the Moon and Stars, in the Company of a Pretty Woman! I am much miſtaken if that's a time for Contemplation: Well Madam, *ſaid I to the Counteſs*, is not the Night as pleaſant as the Day? The Day, *ſaid ſhe*, like a fair Beauty, is clear and dazling; but the Night, like a brown Beauty, more ſoft and moving. You are Generous, Madam, *I reply'd*, to prefer the Brown. You that have all the Charms that belong to the Fair: But is there any thing more Beautiful in Nature than the Day? The Heroines of Romances are generally fair, and that Beauty muſt be perfect, which hath all the advantages of Imagination. Tell not me, *ſaid ſhe*, of perfect Beauty, nothing can be ſo that is not moving. But ſince you talk of Romances, why do Lovers in their Songs and Elegies addreſs themſelves to the Night? 'Tis the Night, Madam, *ſaid I*, that Crowns their Joys, and therefore deſerves their Thanks. But 'tis the Night, *ſaid ſhe*, that hears their Complaints,

and how comes it to paſs, the Day is ſo little truſted with their ſecrets? I confeſs, Madam, *ſaid I*, the Night hath ſomewhat a more melancholly Air, than the Day; we fancy the Stars march more ſilently than the Sun, and our thoughts wander with the more liberty, whilſt we think all the World at reſt but our ſelves: Beſides, the Day is more uniform, we ſee nothing but the Sun, and Light in the Firmament; whilſt the Night gives us variety of Objects, and ſhews us ten thouſand Stars, which inſpire us with as many pleaſant Ideas. What you ſay is true, *ſaid ſhe*, I love the Stars, there is ſomewhat charming in them, and I could almoſt be angry with the Sun for effacing 'em. I can never pardon him, *I cry'd*, for keeping all thoſe Worlds from my ſight: What Worlds, *ſaid ſhe*, looking earneſtly upon me, what Worlds do you mean?

I beg your pardon, Madam, *ſaid I*, you have put me upon my folly, and I begin to rave: What folly, *ſaid ſhe*, I diſcover none? Alas, *ſaid I*, I am aſham'd,

I must own it, I have had a strong Fancy every Star is a World. I will not swear it is true, but must think so, because it is so pleasant to believe it; 'Tis a Fancy come into my head, and is very diverting. If your folly be so diverting, *said the Countess*, Pray make me sensible of it; provided the Pleasure be so great, I will believe of the Stars all you would have me. It is, *said I*, a diversion, Madam, I fear you will not relish; 'tis not like one of *Moliere*'s Plays, 'tis a Pleasure rather of the fancy than of the Judgment. I hope, *replyed she*, you do not think me incapable of it; teach me your Stars, I will shew you the contrary. No, no, *I reply'd*, it shall never be said I was talking Philosophy at ten of the Clock at Night, to the most amiable Creature in the World, find your Philophers somewhere else.

But in vain I excus'd my self, who could resist so many Charms? I was forc'd to yield, and yet I knew not where to begin; for to a Person who understood nothing of Natural Philo-

sophy

ſophy you muſt go a great way about to prove that the Earth may be a Planet, the Planets ſo many Earths, and all the Stars Worlds; however to give her a general Notion of Philoſophy, I at laſt reſolv'd on this Method. All Philoſophy, *ſaid I*, Madam, is founded upon two things, either that we are too ſhort-ſighted, or that we are too curious; for if our eyes were better than they are, we ſhould ſoon ſee whether the Stars were Worlds or not; and if on the other ſide we were leſs curious, we ſhould not care whether the Stars are Worlds or not, which I think is much to the ſame purpoſe. But the buſineſs is, we have a mind to know more than we ſee: And again, if we could diſcern well what we do ſee, it would be ſo much known to us: But we ſee things quite otherwiſe than they are. So that your true Philoſopher will not believe what he doth ſee, and is always conjecturing at what he doth not, which is a Life I think not much to be envy'd: Upon this I fancy to my ſelf, that Nature very much reſembleth an

Opera, where you ſtand, you do not ſee the Stage as really it is; but it is plac'd with advantage, and all the Wheels and Movements are hid, to make the Repreſentation the more agreeable: Nor do you trouble your ſelf how, or by what means the Machines are moved, tho' certainly an Engineer in the Pit is affected with what doth not touch you; he is pleas'd with the motion, and is demonſtrating to himſelf on what it depends, and how it comes to paſs. This Engineer then is like a Philoſopher, tho' the difficulty is greater on the Philoſopher's part, the Machines of the Theatre being nothing ſo curious as thoſe of Nature, which diſpoſeth her Wheels and Springs ſo out of ſight, that we have been long a gueſſing at the Movement of the Univerſe. Suppoſe then the Sages at an Opera, the *Pithagoras*'s, the *Plato*'s, the *Ariſtotle*'s, and all the Wiſe Men, who have made ſuch a noiſe in the World, for theſe many Ages: We will ſuppoſe 'em at the Repreſentation of *Phaeton*, where they ſee the aſpiring Youth lifted up by the Winds, but do not diſco-

ver

ver the Wires by which he mounts, nor know they any thing of what is done behind the Scenes. Would you have all these Philosophers own themselves to be stark Fools, and confess ingenuously they know not how it comes to pass: No, no, they are not called Wise Men for nothing; tho', let me tell you, most of their Wisdom depends upon the ignorance of their Neighbours. Every man presently gives his Opinion, and how improbable so ever, there are Fools enough of all sorts to believe 'em: One tells you *Phaeton* is drawn up by a hidden Magnetick Vertue, no matter where it lies; and perhaps the grave Gentleman will take pet, if you ask him the Question. Another says, *Phaeton* is compos'd of certain Numbers that make him mount; and after all, the Philosopher knows no more of those numbers than a sucking Child of *Algebra*: A third tells you, *Phaeton* hath a secret love for the top of the Theatre, and like a true Lover cannot be at rest out of his Mistresses Company, with an hundred such extravagant fancies,

cies, that a Man must conclude the Old Sages were very good Banterers. But now comes Monsieur *Descartes*, with some of the Moderns, and they tell you *Phaeton* ascends, because a greater weight than he descends; so that now we do not believe a Body can move without it is push'd and forc'd by another body, and as it were drawn by Cords, so that nothing can rise or fall but by the means of a Counterpoise; he then that will see Nature really as she is, must stand behind the Scenes at the Opera. I perceive, *said the Countess*, Philosophy is now become very Mechanical. So Mechanical, *said I*, that I fear we shall quickly be asham'd of it; they will have the World to be in great, what a Watch is in little; which is very regular, and depends only upon the just disposing of the several parts of the Movement. But pray tell me, Madam, had you not formerly a more sublime Idea of the Universe? Do you not think you did then honour it more than it deserv'd? For most have the less esteem of it since they

they have pretended to know it. I am not of their opinion, *said she*, I value it the more since I know it resembles a Watch, and the whole order of Nature the more plain and easie it is, to me it appears the more admirable.

I know not, *said I*, who hath inspir'd you with these solid Notions, but I am certain there are few that have them besides your self, People generally admire what they do not comprehend, they have a Veneration for Obscurity, and look upon Nature while they do not understand her, as a kind of Magick, and despise her below Legerdemain, when once they are acquainted with her; but I find you, Madam, so much better dispos'd, that I have nothing to do but to draw the Curtain, and shew you the World. That then which appears fartheſt from the Earth, (where we reside) is call'd the Heavens, that Azure Firmament where the Stars are fastned like so many Nails, and are call'd fix'd, because they seem to have no other Motion

tion than that of their Heaven, Which carries them with it self from East to West. Between the Earth and the great Vault (as I may call it) hang at different heights the Sun, and the Moon, with the other Stars, *Mercury*, *Venus*, *Mars*, *Jupiter* and *Saturn*, which we call the Planets; these Planets, not being fastned to the same Heaven, and having very unequal Motions, have divers Aspects and Positions. Whereas the fix'd Stars in respect to one another, are always in the same Situation for Example, *Charles*'s Wain which is compos'd of those seven Stars, hath been and ever will be as it now is, tho' the Moon is sometimes nearer to the Sun, and sometimes farther from it, and so it is with the rest of the Planets. Thus things appear'd to the old *Caldæan* Shepherds, whose great leisure did produce these first Observations, which have since been the foundation of Astronomy, for Astronomy had its Birth in *Caldæa*, as Geometry was born in *Egypt*, where the

Inun-

Inundation of the *Nile* confounding the bounds of their Fields, was an occasion of their inventing exacter Measures to distinguish every ones Land from that of his Neighbour: So that Astronomy was the Daughter of Idleness, Geometry the Daughter of Interest; and if we did but examine Poetry, we should certainly find her the Daughter of Love.

I am glad, *said the Lady*, I have learnt the Genealogie of the Sciences, and am convinc'd I must stick to Astronomy, my Soul is not mercenary enough for Geometry, nor is it tender enough for Poetry; but I have as much time to spare as Astronomy requires; beside we are now in the Country, and lead a kind of Pastoral life, all whith suits best with Astronomy. Do not deceive your self, Madam, *said I*, 'tis not a true Shepherd's life to talk of the Stars and Planets: See if they pass their time so in *Astrea*. That sort of Shepherds Craft, *reply'd she*, is too dangerous for me to learn: I love the honest

honeſt *Caldæans*, and you muſt teac
me their Rules, if you would have m
improve in their Science. But let
proceed, When they had ſank'd th
Heavens in that manner you tell m
pray, what is the next Queſtion? Th
next, *ſaid I*, is the diſpoſing the ſeve
ral parts of the Univerſe, which th
Learned call making a Syſteme; bu
before I expound the firſt Syſteme,
would have you obſerve, we are all
naturally like that Mad-man at *Athens*,
who fancy'd all the Ships were hi
that came into the Port *Pyræum*: Not
is our Folly leſs extravagant, we be-
lieve all things in Nature deſign'd fo
our uſe; and do but ask a Philoſopher,
to what purpoſe there is that prodigi-
ous company of fix'd Stars, when a far
leſs number would perform the ſervice
they do us? He anſwers coldly, they
were made to pleaſe our Sight, Up-
on this Principle they imagin'd the
Earth reſted in the Centre of the Uni-
verſe, while all the Celeſtial Bodies
(which were made for it) took the

pains

ains to turn round to give light to . They plac'd the Moon above the arth, *Mercury* above the Moon, after *Venus* the Sun, *Mars*, *Jupiter*, *Saturn*, bove all theſe they ſet the Heaven of x'd Stars, the Earth was juſt in the middle of thoſe Circles which contain the Planets, and the greater the Circles were, they were the farther diſtant from the Earth, and by conſequence the fartheſt Planets took up the moſt time in finiſhing their Courſe, which in effect is true: But why, *ſaid the Counteſs*, interrupting me, do you diſlike this Syſteme? It ſeems to me very Clear and Intelligible. However, Madam, *ſaid I*, I will make it plainer; for ſhould I give it you as it came from *Ptolomy* its Author, or from ſome who have ſince ſtudy'd it, I ſhould fright you, I fancy, inſtead of diverting you. Since the Motions of the Planets are not ſo regular, but that ſometimes they go faſter, ſometimes ſlower, ſometimes are nearer the Earth, and ſometimes farther from it; the Ancients did

did invent I do not know now many Orbs or Circles involv'd one within another, which they thought would salve all Objections; this confusion of Circles was so great, that at that time when they knew no better, a certain King of *Arragon*, a great Mathematician, but not much troubled with Religion, said *That had God consulted him when he made the World, he would have told him how to have fram'd it better.* The fancy was very Atheistical, and no doubt the Instructions he would have given the Almighty, was the suppressing those Circles with which they had clog'd the Celestial Motions, and the taking away two or three superfluous Heavens which they had placed above the fixed Stars; for these Philosophers to explain the Motion of the Celestial Bodies, had above the uppermost Heaven (which we see,) found another of Crystal, to influence and give Motion to the inferior Heavens; and wherever they heard of another Motion, they presently clap'd up a Crystal Heaven which cost 'em nothing.

nothing. But why must their Heaven be of Christal, *said the Countess*, would nothing else serve as well? No, no, *I reply'd*, nothing so well; for the Light was to come thro' them, and yet they were to be solid. *Aristotle* would have it so, he had found Solidity to be one of their Excellences, and when he had once said it, no body would be so rude as to question it. But it seems there were Comets much higher than the Philosophers expected, which as they pass'd along broke the Crystal Heavens, and confounded the Universe. But to make the best of a bad Market, they presently melt down their broken Glass, and to *Aristotle*'s Confusion, made the Heavens fluid; and by the observations of these latter Ages it is now out of doubt, that *Venus* and *Mercury* turn round the Sun, and not round the Earth, according to the Antient Systeme, which is now every where exploded, and all the *Ipse Dixits* not worth a rush. But that which I am going to lay down, will salve all, and as so clear, that the King of *Arragon* him-

self may spare his Advice. Methinks, *saith the Countess*, your Philosophy is a kind of Out-cry, where he that offers to do the work cheapest, carries it from all the rest. 'Tis very true, *said I*, Nature is a great Housewife, she always makes use of what costs least, let the difference be never so inconsiderable; and yet this frugality is accompany'd with an extraordinary magnificence, which shines thro' all her works; that is, she is magnificent in the Design, but frugal in the Execution; and what can be more praiseworthy, than a great design accomplish'd with a little Expence? But in our Ideas we turn things topsy-turvy, we place our thrift in the Design, and are at ten times more charge in Workmanship than it requires, which is very ridiculous. Imitate Nature then, *saith she*, in your Systeme, and give me as little trouble as you can to comprehend you. Fear it not, Madam, *said I*, we have done with our impertinencies: Imagine then a *German* call'd *Copernicus* confounding every thing, tearing in pieces the beloved Circles of

Antiquity

Antiquity, and shattering their Crystal Heavens like so many Glass-Windows, seiz'd with the noble Rage of Astronomy, he snatcheth up the Earth from the Centre of the Universe, sends her packing, and placeth the Sun in the Centre to which it did more justly belong, the Planets, no longer turn round the Earth, and do not inclose it in the Circles they describe; if they give us light, it is but by chance, and as they meet us in their way. All now turns round the Sun, the Earth her self goes round the Sun, and *Copernicus* to punish the Earth for her former Lazyness, makes her contribute all he can to the Motion of the Planets and Heavens, and now stripp'd of all the heavenly Equipage with which she was so gloriously attended, she hath nothing left her but the Moon, which still turns round about her: Fair and softly, *saith the Countess*, I fancy you your self are seiz'd with the Noble Fury of Astronomy; a little less Rapture, and I shall understand you the better. The Sun you say is in the Centre of the Universe, and

is immovable; what follows next? It is *Mercury*, *said I*, he turns round the Sun, so that the Sun is the Centre of the Circle wherein *Mercury* moves; above *Mercury* is *Venus*, who turns also round the Sun; after comes the Earth, which being placed higher than *Mercury* and *Venus*, makes a greater Circle round the Sun than either of them; at last come *Mars*, *Jupiter*, *Saturn*, in the same order I name 'em, so that *Saturn* hath the greatest Circle round the Sun, which is the reason he is a longer time in making his Revolution than any of the other Planets. And the Moon, you have forgot her, *said she*: We shall quickly find her again, *said I*; the Moon turns round the Earth, and doth not leave her, but as the Earth advanceth in the Circle, which she describes about the Sun, and if the Moon turns round the Sun, it is because she will not quit the Earth; I understand you, *said she*, and I love the Moon for staying with us when all the other Planets do abandon us; nay, I fear your *German* would have willingly taken her away too

too if he could, for in all his proceedings, I find he had a great ſpight to the Earth. 'Twas well done of him, *ſaid I*, to abate the Vanity of Mankind, who had taken up the beſt place in the Univerſe, and it pleaſeth me to ſee the Earth in the croud of the Planets. Sure, *ſaid ſhe*, you do not think their Vanity extends it ſelf as far as Aſtronomy! Do you believe you have humbled me, in telling me the Earth goes round the Sun? For my part I do not think my ſelf at all the worſe for't. I confeſs, *ſaid I*, Madam, I believe a Fair Lady would be much more concern'd for her place at a Ball, than for her rank in the Univerſe, and the Precedence of two Planets will not make half ſuch a noiſe in the World, as that of two Ambaſſadours; however the ſame inclination which reigns at a Ceremony, governs in a Syſteme, and if you love the uppermoſt place in the one, the Philoſopher deſires the Centre in the other; he flatters himſelf that all things were made for him, and inſenſibly believes a matter of pure ſpeculation to be a point of Intereſt,

rest. This is a Calumny, *said she*, you have invented against Mankind; why did they receive this Systeme if it was so abasing? I know not, *said I*, but I am sure *Copernicus* himself distrusted the success of his Opinion, he was a long time before he would venture to publish it, nor had he done it then without the importunity of his Friends. But do you know what became of him? The very day they brought him the first Proof of his Book, he dy'd; he foresaw he should never be able to clear all the contradictions, and very wisely slipt out of the way. I would be just to all the World, *said the Countess*; but 'tis hard to fancy we move and yet see we do not change our place; we find our selves in the Morning where we lay down at Night: Perhaps you will tell me the whole Earth moves.—Yes certainly, *said I*, it is the same case as if you fell asleep in a Boat upon the River, when you awake you find your self in the same place, and the same situation in respect of all the parts of the Boat. 'Tis true, *she reply'd*, but here's a great differ-

 rence

rence, when I awake I find another shore, and that shows me, my Boat hath chang'd place. But 'tis not the same with the Earth, I find all things as I left 'em. No, no, *said I*, there is another Shore too; You know that beyond the Circles of the Planets are fix'd Stars, there is our Shore. I am upon the Earth, and the Earth makes a great Circle round the Sun, I look for the Centre of the Circle and see the Sun there, I then direct my sight beyond the Sun in a right Line, and should certainly discover the fix'd Stars which answer to the Sun, but that the light of the Sun effaceth 'em: But at Night I easily perceive the Stars which corresponded with him in the Day, which is exactly the same thing; if the Earth did not change its place in the Circle where it is, I should see the Sun always against the same fix'd Stars, but when the Earth doth change its place, the Sun must answer to other Stars and there again is your Shore, which is always changing. And seeing the Earth makes her Circle in a Year, I see the Sun likewise in the

ſpace of a Year anſwer ſucceſſively to the whole Circle of the fix'd Stars, which Circle is call'd the Zodiack: I will draw you the Figure of it, if you pleaſe, on the Sand? 'Tis no matter *ſaid ſhe*, I can do well enough without it; beſide, it will give an Air of Learning to my Park which I would not have in it: For I have heard of a certain Philoſopher, who being Shipwrack'd, and caſt upon an unknown Iſland, ſeeing ſeveral Mathematical Figures trac'd on the Sea-ſhore, cry'd out to thoſe that follow'd him, Courage, Courage, my Companions, the Iſle is inhabited, behold the Footſteps of Men; But you may ſpare your Figures, ſuch Footſteps are not decent here.

I confeſs, *ſaid I*, Madam, the Footſteps of Lovers would better become this Place; that is, your Name and Cypher grav'd on the Trees by your Adorers. Tell not me, *ſaid ſhe*, of Lovers and Adorers, I am for my beloved Sun and Planets. But how comes it to paſs that the Sun as to the

fixed

fixed Stars compleats his Course but in a Year, and yet goes over our Heads every Day? Did you never, *I reply'd*, observe a Bowl on a Bowling-green? It runs towards the Block, and at the same time turns very often round it self, so that the Parts which were above are below, and those which were below are above; just so it is with the Earth, at the same time that she advanceth on the Circle which in a Years space she makes round the Sun, in twenty four hours she turns round her self; so that in twenty four hours every part of the Earth loseth the Sun, and recovers him again, and as it turns towards the Sun, it seems to rise, and as it turns from him, it seems to fall. It is very pleasant, *said she*, that the Earth must take all upon her self, and the Sun do nothing. And when the Moon, the other Planets, and the fix'd Stars seem to go over our Heads every twenty four hours, you'll say that too is only Fancy? Pure Fancy, *said I*, which proceeds from the same cause, for the Planets

nets compleat their Courſes round the Sun at unequal times, according to their unequal diſtances, and that which we ſee to Day anſwer to a certain Point in the Zodiack or Circle of the fix'd Stars, to morrow we ſee anſwer to another Point, becauſe it is advanced on its own Circle as well as we are advanced upon ours. We move, and the Planets move too, which muſt make a great alteration; ſo that what ſeems irregular in the Planets, proceeds only from our Motion, when in truth they are all very Regular: I will ſuppoſe 'em ſo, *ſaid the Counteſs*, but I would not have their Regularity put the Earth to ſo great trouble; methinks you exact too much Activity from ſo ponderous a Maſs. But, *ſaid I*, had you rather that the Sun and all the Stars, which are vaſt great Bodies, ſhould in twenty four Hours travel ſuch an infinity of Miles, and make ſo prodigious a Tour as they needs muſt, if the Earth did not turn round it ſelf every twenty four Hours? Oh, *ſaid ſhe*, the Sun and

the Stars are all Fire, their Motion is not very difficult; but the Earth, I fancy, is a little unweildly: That signifies nothing, *I reply'd*; for what do you think of a first-rate Ship, which carries near an hundred Guns, and a thousand Men, beside her Provisions and other Furniture? You see one puff of Wind makes it sail on the Water, because the Water is liquid, and being easily separated, doth very little resist the Motion of the Ship: So the Earth tho' never so Massive is as easily born up by the Celestial Matter, which is a thousand times more fluid than the Water, and fills all that great Space where the Planets float; for where would you the Earth should be fastned to resist the Motion of the Celestial Matter, and not be driven by it? You may as well fancy a little block of Wood can withstand the current of a River. But pray, *said she*, how can the Earth with all its weight be born up by your Celestial Matter, which must be very light, because it is so fluid? It doth not argue,

said

said I, that what is most fluid is most light: For what think you of the great Vessel I mention'd but now, which with all its Burthen is yet lighter than the Water it floats on? I will have nothing to do with the great Vessel, *said she*, and I begin to apprehend my self in some danger on such a whirlegigg as you have made of the Earth: There is no danger, *I reply'd*; but Madam, if you are afraid, we will have the Earth supported by four Elephants, as the *Indians* believe it. Hey day, *cry'd she*, here's another Systeme; however I love those People for taking care of themselves, they have a good Foundation to trust to, while you *Copernicans* are a little too venturous with the Celestial Matter; and yet I fancy if the *Indians* thought the Earth in the least danger of sinking, they would double their number of Elephants. They do well, *said I*, laughing at her fancy, who would sleep in Fear? And if you have occasion for 'em to Night, we will put as many

as

as you pleaſe in our Syſteme, we can take 'em away again by degrees as you grow better confirm'd. I do not think 'em very neceſſary, *ſaid ſhe*, I have courage enough to turn. You ſhall turn with pleaſure, Madam, *ſaid I*, and ſhall find delightful Ideas in this Syſteme. For example, ſometimes I fancy my ſelf ſuſpended in the Air, without any Motion, while the Earth turns round me in twenty four Hours; I ſee I know not how many different Faces paſs under me, ſome white, ſome black, and ſome tauny; ſometimes I ſee Hats, and ſometimes Turbants, now Heads, with Hair, and then ſhav'd Heads; here I ſee Cities with Steeples, others with Spires and Creſcents, others with Towers of Purcelain, and anon great Countrys with nothing but Cottages; here, I ſee vaſt Oceans, and there moſt horrible Deſarts; in ſhort, I diſcover the infinite variety which is upon the ſurface of the Earth. I confeſs, *ſaid ſhe*, twenty four Hours would thus be very well beſtow'd, ſo that in the ſame Place where

where we are now, I do not mean in th
Park, but we will suppose our selves
the Air, other People continually pa
by who take up our Place, and at th
end of twenty four Hours we return t
it again.

Copernicus himself, *said I*, could no
have comprehended it better: First then
we see some of our Neighbours pas
sing by us, up to the Ears in Politicks,
yet settling their Nation no better than
we do the World in the Moon; then
follows a great Sea, perhaps a Fleet o
Ships, perhaps a Makrel-Boat, no mat
ter whether; then come some of the *I*
roquois going to eat a Prisoner for thei
Breakfast, who seems as little concern'd
as his Devourers: After appear the Wo
men of the Land of *Jesso*, who spend
all their time in dressing their Hus
bands Dinners and Suppers, and pain
ting their Lips and Eye-brows blue, on
ly to please the greatest Villains in the
World: Then the fair *Circassians*, who
are very free of their Favours, and
grant all to the first Comer, except a
little

little they reserve for their Husbands; then the *Tartars* going to steal Concubines for the *Turks* and *Persians*; and at last our own dear Country-men, it may be in some points as ridiculous as the best of 'em. It is very pleasant, *said the Countess*, but to imagine what you tell me, tho' if I was above, and saw all this, I would have the Liberty to hasten or retard the Motions of the Earth, according as the Objects pleas'd me more or less, and I assure you I should quickly send packing the *Politicians* and *Man-eaters*, but should have a great curiosity for the Fair *Circassians*, for methinks they have a custom very particular. They are so extreamly Beautiful, *said I*, that their Husbands have enough, and to spare to Strangers. I fear then, *said she*, the Women of our Country are very ugly, in respect of those Fair Ladies, for the Husbands part with nothing here, but keep all to themselves. 'Tis because they make more use, *I reply'd*, of —— Hold your peace, *said she*, and no more of your Fooleries,

I have a difficulty to clear, and you must be serious. As the Earth moves, the Air changeth every moment, so we breath the Air of another Country. Not at all, *I reply'd*, for the Air which encompasseth the Earth, doth not extend above a certain height, perhaps 20 leagues it follows us and turns with us: Have you not seen the work of a Silk-Worm, the Shells which those little Animals imprison themselves in, and weave with so much Art; they are made of a Silk very close, but are covered with a Down very slack and soft: So the Earth which is solid, is covered from the surface to 20 Leagues upwards, with a kind of a Down, which is the Air, and all the Shell of the Silk-Worm turns at the same time: Beyond the Air is the Celestial Matter, incomparably more pure and subtile, and much more agitated than the Air: Your comparison, *said she*, is somewhat mean, and yet what wonders are wrought, what Wars, what Changes in this little Shell? 'Tis true, *I reply'd*, but Nature takes no notice of such little particular

Motion

Motions, but drives us along with the general motion, as if she were at Bowls. Methinks, *said she*, 'tis very ridiculous to be upon a thing that turns, and yet not be well assur'd that it doth turn; and to tell you the Truth, I begin to distrust the Reasons you give, why we should not be sensible of the Motion of the Earth; for is it possible there should not some little mark be left, by which we might perceive it?

All Motions, *said I*, the more common and natural they are, the less perceptible, and this holds true even in Morality; the Motion of Self-Love is so natural to us, that for the most part we are not sensible of it, and we believe we act by other Principles: You are Moralizing, *said she*, to a Question of Natural Philosophy: But 'tis enough for the first time, let us now go home, and meet here again to Morrow; you with your Systemes, and I with my Ignorance.

In returning back to the Castle, that I might say all I could on the Subject, I told her of a third Systeme, invented by

Tycho Brahe, who had fix'd the Earth in the Centre of the World, turn'd the Sun round the Earth, and the reſt of the Planets round the Sun; for ſince the new diſcoveries, there was no way left to have the Planets turn round the Earth. But the Counteſs, who had a quick apprehenſion, ſaid, ſhe thought it was too affected, among ſo many great Bodies, to exempt the Earth only from turning round the Sun; that it was improper to make the Sun turn round the Earth, when all the Planets turn round the Sun; and that tho' this Syſteme was to prove the immobility of the Earth, yet ſhe thought it very improbable: So we reſolv'd to ſtick to *Copernicus*, whoſe Opinion we thought moſt Uniform, Probable, and Diverting.

The Second Evening.

IN the Morning, I ſent to the Counteſs's Apartment, to know how ſhe had reſted, and whether the Motion

of

of the Earth had not disturb'd her? She answer'd, she began to be accustom'd to it, and that she had slept as well as *Copernicus* himself: Soon after there came some Neighbours to dine with her, but they went away in the Evening; so that after Supper we walk'd again into the Park, and immediately fell upon our Systemes. She so well conceiv'd what I told her the night before, that she desir'd I would proceed without any repetition. Well, Madam, *said I*, Since the Sun, which is now immoveable, hath left off being a Planet; and the Earth, which turns round him, is now become one, you will not be surprized when you hear that the Moon is an Earth too, and that she is inhabited as ours is. I confess, *said she*, I have often heard talk of the World in the Moon, but I always look'd upon it as Visionary and meer Fancy. And it may be so still, *said I*. I am in this case as People in a Civil War, where the uncertainty of what may happen makes 'em hold intelligence with the opposite

Party; for tho' I verily believe the Moon is inhabited, I live civilly with those who do not believe it; and I am (as some honest Gentlemen in point of Religion) still ready to embrace the prevailing Opinion, but till the Unbelievers have a more considerable Advantage, I am for the People in the Moon.

Suppose there had never been any Communication between *London* and *Greenwich*, and a Cockney, who was never beyond the Walls of *London*, saw *Greenwich* from the top of the Pyramid; you ask him if he believes *Greenwich* is inhabited as *London* is? He presently answers, No; for, *faith he*, I see People at *London*, but none at *Greenwich*; nor did I ever hear of any there: 'Tis true, you tell him, that from the Pyramid he cannot perceive any Inhabitants at *Greenwich*, because of the distance; but all that he doth discover of *Greenwich* very much resembleth what he sees at *London*, the Steeples, Houses, Walls; so that it may very well be inhabited as *London*

is

is; all this signifies nothing, my Cockney still persists *Greenwich* is not inhabited, because he sees no body there. The Moon is our *Greenwich*, and every one of us as meer Cockneys as he that never was out of the sound of Bow-Bell. You are too severe, *said she*, upon your Fellow-Citizens; we are not all sure so silly as your Cockney; since *Greenwich* is just as *London* is, he is a Fool if he doth not think it inhabited: But the Moon is not at all like the Earth. Have a care what you say, *I reply'd*; for if the Moon resembleth the Earth, you are under a necessity to believe it inhabited. If it be so, *said she*, I own I cannot be dispens'd from believing it, and you seem so confident of it, that I fear I must, whether I will or no. 'Tis true, the two Motions of the Earth (which I could never imagine till now) do a little stagger me as to all the rest: But yet how is it possible the Earth should enlighten as the Moon doth, without which they cannot be alike? If that be all, *said I*, the difference is

not great, for 'tis the Sun which is the ſole Fountain of Light; that Quality proceeds only from him, and if the Planets give Light to us, it is becauſe they firſt receive it from the Sun; the Sun ſends Light to the Moon, and ſhe reflects it back on the Earth; the Earth in the ſame manner receives Light from the Sun, and ſends it to the Moon; for the Diſtance is the ſame between the Earth and the Moon, as between the Moon and the Earth. But is the Earth, *ſaid the Counteſs*, as fit to ſend back the Light of the Sun as the Moon is? You are altogether for the Moon, *ſaid I*, ſhe is much oblig'd to you; but you muſt know that Light is made up of certain little Balls, which rebound from what is ſolid, but paſs through what admits of an entrance in a right Line, as Air or Glaſs: So that, that which makes the Moon enlighten us, is that ſhe is a Firm and Solid Body, from which the little Balls rebound; and we muſt deny our Senſes, if we will not allow the Earth the ſame Solidity; in ſhort, the

Difference

Difference is how we are ſeated, for the Moon being at ſo vaſt a Diſtance from us, we can only diſcover her to be a Body of Light, and do not perceive that ſhe is a great Maſſe, altogether like the Earth: Whereas on the contrary, becauſe we are ſo near the Earth, we know her to be a great Maſſe, but do not diſcover her to be a Body of Light, for want of the due diſtance: It is juſt ſo with us all, *ſaid the Counteſs*, we are dazled with the Quality and Fortune of thoſe who are above us, when, do but look to the Bottom, and we are all alike.

Very true, *ſaid I*, we would judge of all things, but ſtill ſtand in the wrong place; we are too near to judge of our ſelves, and too far off to know others: So that the true way to ſee things as they are, is to be between the Moon and the Earth, to be purely a Spectator of this World, and not an Inhabitant. I ſhall never be ſatisfied, *ſaid ſhe*, for the Injuſtice we do the Earth, and the too favourable Opinion we have

of the Moon, till you assure me that the People in the Moon are as little acquainted with their Advantages, as we are with ours, and that they take our Earth for a Planet, without knowing theirs is one too. Do not doubt it, said I, we appear to them to perform very regularly our function of a Planet: 'Tis true, they do not see us make a Circle round them, but that is no great matter. That half of the Moon which was turn'd towards us at the beginning of the World, hath been turn'd towards us ever since; the Eyes, Mouth, and Face which we have fancy'd of the Spots in her, are still the same; and if the other opposite half should appear to us, we should no doubt fancy another Figure from the different Spots that are in it. Not but that the Moon turns upon her self, and in the same time that she turns round the Earth, that is in a Month; but while she is making that turn upon her self, and that she should hide a cheek for Example, and appear somewhat else to us, she makes a like part of her Circle round

round the Earth, and ſtill preſents to us the ſame Cheek; ſo that the Moon, who in reſpect of the Sun and Stars turns round her ſelf, in reſpect of us doth not turn at all; they ſeem to her to riſe and ſet in the ſpace of fifteen Days; but for our Earth, it appears to her to be held up in the ſame place of the Heavens: 'Tis true, this apparent Immobility is not very agreeable for a Body which ſhould paſs for a Planet, but it is not altogether perfect, the Moon hath a kind of trembling, which cauſeth a little corner of her Face to be ſometimes hid from us, and a little corner of the oppoſite half appears; but then upon my word, the attributes that trembling gives, and fancies that we have in the Heavens the motion of a *Penduſum*, which vibrates to and fro.

I find, *ſaith the Counteſs*, the Planets are juſt like us; we caſt that upon others which is in our ſelves; the Earth ſaith, *'Tis not I that turn, 'tis the Sun*; the Moon ſaith, *'Tis not I that ſhake, 'tis the Earth*; there is a great deal of

Errour

Errour every where. But I would not advise you, *said I*, to undertake the reforming it; you had better convince your self of the entire resemblance of the Earth and the Moon: Imagine then these two great Bowls held up in the Heavens, you know that the Sun always enlightens the one half of a Body that is round, and the other half is in the Shadow; there is then one half of the Earth and one half of the Moon which is enlightned by the Sun; that is, which hath Day, and the other half which is Night. Observe also, that as a Ball hath less force after it hath been struck against a Wall which sends it to the other side, so Light is weakned when it is reflected. This pale Light which comes to us from the Moon, is the very Light of the Sun, but it cannot come to us from the Moon but by reflection; it hath lost much of the Force and Lustre it had when it came directly from the Sun upon the Moon; and that bright Light which shines directly upon us from the Sun, and which the Earth

reflects

reflects upon the Moon, is as pale and weak when it arrives there; ſo that the Light which appears to us in the Moon, and which enlightens our Nights, is the parts of the Moon which have Day, and that part of the Earth which hath Day, when it is oppoſite to the part of the Moon which hath Night, gives Light to it: All depends upon how the Moon and the Earth behold one another. At the beginning of the Month we do not ſee the Moon, becauſe ſhe is between the Sun and us; that half of her which hath Day, is then turn'd towards the Sun, and that half which hath Night, turn'd towards us; we cannot ſee it then, becauſe it hath no Light upon it; but that half of the Moon which hath Night, being turn'd to the half of the Earth which hath Day, ſees us without being perceiv'd, and we then appear to them juſt as the Full Moon doth to us; ſo that, as I may ſay, the People of the Moon have then a full Earth; but the Moon being advanc'd upon her Circle

of

of a Month, comes from under the Sun, and begins to turn towards us a little corner of the half which is Light, there's the Crescent; then those parts of the Moon which hath Night do not see all the half of the Earth which hath Day, and we are then in the Wayn to them.

I comprehend you very well, *said the Countess*, the People in the Moon have a Month quite contrary to us; when we have a full Moon, their half of the Moon which is light, is turn'd to our half of the Earth which is dark; they do not see us at all, and they have then a new Earth, this is plain. But now tell me how come the Eclipses? You may easily guess that, *said I*, when it is new Moon, that she is between the Sun and us, and all her dark half is turn'd towards us who have Light, that obscure shadow is cast upon us, if the Moon be directly under the Sun, that shadow hides him from us, and at the same time obscures a part of that half of the Earth which

is light, which was seen by that half of the Moon which was dark, here then is an Eclipse of the Sun to us during our Day, and an Eclipse of the Earth to the Moon during her Night. When it is Full Moon, the Earth is between her and the Sun, and all the dark half of the Earth is turn'd towards all the light half of the Moon; the shadow then of the Earth casts it self toward the Moon, and if it falls on the Moon, it obscures that Light half which we see, which hath then Day, and hinders the Sun from shining on it: Here then is an Eclipse of the Moon to us during our Night, and an Eclipse of the Sun to the Moon during her Day: But the reason that we have not Eclipses every time that the Moon is between the Sun and the Earth, or the Earth between the Sun and the Moon, is, because these three Bodies are not exactly plac'd in a right Line, and by Consequence that that should make the Eclipse, casts its shadow a little beside that which should be obscur'd.

I am surpriz'd, *said the Countess*, th there should be so little mystery in eclipses, and that the whole World shou not know the cause of 'em. Nor nev will, *said I*, as some People go abo in. In the *East Indies*, when the Su and the Moon are in Eclipse, they b lieve a certain Devil who hath blac Claws is seizing on those Planets wi his Talons, and during that time th Rivers are cover'd with the Heads *Indians*, who are up to the Neck Water, because they esteem it a ve devout Posture, to implore the Sun a the Moon to defend themselves again the Devil. In *America* they are perfu ded that the Sun and the Moon, wh Eclipsed, are angry, and what is it the will not do to be reconciled with them The *Greeks* who were so refin'd, di they not believe the Moon was encha ted, and that the Magicians forc'd he to descend from Heaven, and shed a dan gerous juice on the Plants? Nay, w what a pannick Fear were we in abou thirty years ago at an Eclipse of th Sun

Sun? How many People hid themselves in their Cellars, and all the Philosophers of *Gresham* could not perswade them to come out till the Eclipse was over?

Methinks, *said she*, 'tis scandalous for Men to be such Cowards; there ought to be a general Law of Mankind to prohibit the discoursing of Eclipses, that we might not call to mind the Follies that have been said and done upon that Subject. Your Law then, *said I*, must abolish even the Memory of all things, and forbid us to speak at all, for I know nothing in the World which is not a Monument of the Folly of Man.

But what do you think, *said she*, of the People in the Moon, are they as afraid of an Eclipse as we are? It would be very burlesque for the *Indians* there to be up to the Neck in Water; that the *Americans* should believe the Earth angry with them; the *Greeks* fancy we were bewitch'd, and would destroy their Plants; in short, that we should cause the same Consternation among them, as they

they do here. And why not, *said I*, I do not doubt it at all; for why shou the People of the Moon have mo Wit than we? What right have the to affright us, and not we them? Fo my part, I believe that since a prod gious company of Men have been an ſtill are ſuch Fools to adore the Moo there are People in the Moon that wo ſhip the Earth, and that we are upo our knees the one to the other. Be ſure, *said ſhe*, we don't pretend t ſend any Influences to the Moon, an to give a Criſis to her ſick; if the Peopl have any Wit in thoſe Parts, they wi ſoon deſtroy the Honour, we flatter ou ſelves with, and I fear, we ſhall have th diſadvantage.

Fear it not, Madam, *said I*; do yo think we are the only Fools of the U niverſe? Is is not conſiſtent with Igno rance to ſpread it ſelf every where 'Tis true, we can only gueſs at th Folly of the People in the Moon, but no more doubt it, than I do the moſt au thentick News that comes from thence

What

What News comes from thence, *said she?* That which the Learned bring us, *I reply'd*, who travel thither every day with their Tubes and Telescopes: They will tell you of their Discoveries there, of Lands, Seas, Lakes, high Mountains, and deep Abysses.

I fancy indeed, *said she*, they may discover Mountains and Abysses, because of the remarkable inequality; but how do they distinguish Lands and Seas? Very easily, *said I*, for the Waters letting part of the Light pass thro' them, send back but a very little, so that they appear afar off like so many dark Spots; whereas the Lands being solid, reflect the whole Light, and appear to be more bright and shining: Nay, they pretend to be so well acquainted with the several parts that they have given them all Names; one place they call *Copernicus*, another *Archimedes*, another *Galileus*; there is the *Caspian Sea*, the *Black Lake*, the *Porphirite Mountains*; in short, they have publish'd such exact descriptions of the Moon, that a very Almanack-ma-

ker will be no more to seek there, than I am in *London*.

I must own then, *said the Countess*, they are very exact; but what do they say to the inside of the Country? I would very fain know that. 'Tis impossible, *I reply'd*, Mr. *Flamsted* himself, (one of the most Learned Astronomers of our Age) cannot inform you. You must ask that of *Astolfo*, who was carried into the Moon by St. *John*. I am going to tell you one of the agreeable Follies of *Ariosto*, and I am confident you will be well pleas'd to hear it: I must confess he had better have let alone St. *John*, whose Name is so worthy of Respect, but 'tis a Poetical License, and must be allow'd. The Poem is dedicated to a Cardinal, and a great Pope hath honour'd it with his Approbation, which is prefix'd to several of the Editions; this is the Argument, *Rowland* Nephew to *Charlemagne* falls mad because the fair *Angelica* prefers *Medore* before him. *Astolfo* a Knight Errant, finding himself one Day in the terrestrial

terrestrial Paradise, which was upon the top of a very high Mountain, whereto he was carry'd by his flying Horse, meets St. *John* there, who tells him, if he would have *Rowland* cured, he must make a Voyage with him into the Moon. *Astolfo*, who had a great mind to see Countrys, did not stand much upon entreaty, and immediately there came a fiery Chariot which carry'd the Apostle and the Knight up into the Air; *Astolfo* being no great Philosopher, was surpriz'd to find the Moon so much bigger than it appear'd to him when he was upon the Earth; to see Rivers, Seas, Mountains, Cities, Forrests, nay, what would have surpriz'd me too, Nymphs hunting in those Forrests; but that which was most remarkable, was a Valley where you might find any thing that was lost in our World, of what nature soever, Crowns, Riches, Fame, and an infinity of Hopes, the time we spend in Play, and in searching for the Philosophers Stone, the Alms we give after our Death, the Verses we present to great

Men and Princes, and the Sighs of Lovers. I know not *said she*, what became of the Sighs of Lovers in the time of *Arioſto*, but I fancy there are very few of 'em aſcend to the Moon in our days. Ah Madam, *I reply'd* how many doth the Counteſs of *D*———*r* ſend thither every day? thoſe that are addreſs'd to her, will make a conſiderable Heap; and I aſſure you the Moon keeps all ſafe that is loſt here below. Yet I muſt tell you *Arioſto* doth but whiſper it, tho' every thing is there, even to the Donation of *Conſtantine*, (*i.e.*) the Popes have pretended to be Maſters of *Rome* and *Italy* by Virtue of a Donation which the Emperour *Conſtantine* made *Silveſter*; and the truth is, no body knows what is become of it; but what do you think is not to be found in the Moon? Folly, all that ever was upon the Earth is kept there ſtill, but in lieu of it, it is not to be imagin'd how many Wits (if I may ſo call 'em) that are loſt here, are got up into the Moon, they are ſo many

Vials full of a very subtile Liquor, which evaporates immediately if it be not well stopp'd; and upon every one of these Vials the Names are written to whom the Wits belong; I think *Ariosto* hath heap'd 'em upon one another a little confusedly, but for order sake we will fancy 'em plac'd upon Shelves in a long Gallery; *Astolfo* wonder'd to see several Vials full inscribed with the Names of the most considerable Statesmen, Divines, Lawyers, &c. Bless me, *said he*, is my Lord —— and my Lord —— here! Sir *Tho.* Sir *Fa.* nay, Doctor —— and Father —— too? Why, in my Country, we look upon 'em as Oracles; and after all, it seems, they are but little better than mad Men, if not stark Fools. I find now the poor Rogue was in the right, tho' he was soundly whipp'd for't, who told the Judge that he had seen an Ass cloathed in Scarlet; and a right Worshipful Alderman, that he knew not which was the greatest Bruit of the two, the Beast that bore

the Furr, or the Beast that wore it; but had I been there, I should have told *Astolfo* the saucy Knave was well enough serv'd, for we are not to look upon the Man, but the Place he fills; we are to reverence a Magistrate when and wheresoever we meet him, and to suppose his Merit was the sole cause of his Preferment, tho' we are certain it came by Bribery or Pimping; but enough of this, let us return to our Vials. To confess the truth, I begin to fear, since I have entertain'd you with these Philosophical and Poetical Visions, mine there is not very empty; however, 'tis some consolation to me, that while you are so attentive, you have a little Glass full as well as your Servant: The good Knight found his own wits among the rest, and with the Apostles leave snuff'd it up his Nose, like so much Queen of *Hungary*'s Water; but *Ariosto* said, he did not carry it far, it return'd again to the Moon a little after.

The

—The love of one fair Northern Lass,
Sent up his wit unto the Place it was.

Well, he did not forget *Orlando's* Vial, which was the occasion of his Voyage, but he was cursedly plagu'd to carry it, for *Hero's* wits are naturally very heavy, and there did not want one drop of it; in conclusion *Arioſto*, according to his laudable cuſtom, addreſſeth himſelf to his Miſtreſs in this manner:

Fair Miſtreſs, who for me to Heav'n ſhall fly,
To bring again from thence my wandring wit?
Which I ſtill loſe, ſweet from that piercing eye
The Dart came forth that firſt my heart did hit;
Nor of my loſs at all complain would I,
Might I but keep that which remaineth yet:
But if it ſtill decreaſe, within ſhort ſpace,
I doubt I ſhall be in Orlando's *caſe,*
Yet, well I wot where to recover mine,
Tho' not in Paradiſe, nor Cynthia's *Sphere,*
Yet doubtleſs in a Place no leſs divine,
In that ſweet Face of yours, in that fair Hair,
That ruby Lip, in thoſe two ſtar-like eyes,
There is my wit, I know it wanders there,

And with my Lips, if you would give me leave,
I there would search, I thence would it receive.

Is not this very fine? To reason like *Ariosto*, the safest way of losing our wits, is to be in love; for you see they do not go far from us, we may recover 'em again at our Lips: But when we lose 'em by other means, as for Example, by Philosophizing, whip, they are gone into the Moon, and there is no coming at 'em again when we would. However, *said the Countess*, our Vials have an honourable Station among the Philosophers, when 'tis forty to one, but Love fixeth our Wits on an Object we cannot but be asham'd of. But to take away mine entirely, pray tell me, but tell me seriously, if you believe there are any Men in the Moon? For methinks hitherto you have not been very positive. For my part, *said I*, I do not believe there are Men in the Moon, for do but observe how much the Face of Nature is chang'd between this and *China*: other Visages, Shapes, Manners,

nay, almoſt other Principles of Reaſon; and therefore, between us and the Moon the alteration muſt be much more conſiderable. In the Lands that have been lately diſcover'd, we can ſcarce call the Inhabitants Men, they are rather Animals of humane Shape, and that too ſometimes very Imperfect, almoſt without humane Reaſon; he therefore that will travel to the Moon, muſt not expect to find Men there.

What ſort of People will they be then, *ſaid the Counteſs?* Troth, Madam, *ſaid I*, I know not; for put the caſe that we our ſelves inhabited the Moon, and were not Men, but rational Creatures; could we imagin, do you think, ſuch fantaſtical People upon the Earth, as Mankind is? Is it poſſible we ſhould have an Idea of ſo ſtrange a Compoſition, a Creature of ſuch fooliſh Paſſions, and ſuch wiſe Reflections? So Learned in things of no uſe, and ſo ſtupidly Ignorant of what moſt concerns him? So much concern for Liberty, and yet ſuch great inclinations to Servitude? So deſirous

rous of Happiness, and yet so very incapable of being so? The People in the Moon must be wise indeed to suppose all this of us. But do we not see our selves continually, and cannot so much as guess how we were made? So that we are forc'd to say, the Gods when they created us were drunk with Nectar, and when they were sober again, could not chuse but laugh at their own handy-work. Well, well, *said the Countess*, we are safe enough then, they in the Moon know nothing of us; but I could wish we were a little better acquainted with them, for it troubles me that we should see the Moon above us, and yet not know what is done there. Why, *said I*, are you not as much concern'd for that part of the Earth which is not yet discover'd? What Creatures inhabit it, and what they do there? For we and they are carry'd in the same Vessel; they possess the Prow, and we the Poop, and yet there is no manner of Communication between us; they do not know at one end of the Ship who lives

or what is done at the other end; and you would know what passeth in the Moon, which is another great Vessel, Sailing in the Heavens at a vast distance from us.

Oh, *said she*, for the Earth, I reckon it all as good as discover'd, and can guess at the People, tho' I never heard a word of 'em; for certainly they all resemble us very much, and we may know 'em better when we have a mind to't; they will stay where they are, and 'tis no more but going to see 'em; but we cannot get into the Moon if we would, so that I despair of knowing what they do there. You would laugh at me, *said I*, if I should answer you seriously, perhaps I may deserve it, and yet, I fancy, I can say a great deal to justifie a ridiculous thought that is just now come into my Head; nay, to use the Fools best Argument, I'll lay a wager, I make you own (in spite of Reason) that one of these days there may be a Communication between the Earth and the Moon, and who knows what great

Advantages

Advantages we may procure by it; but consider *America* before it was discover'd by *Columbus*, how profoundly ignorant were those People, they knew nothing at all of Arts or Sciences, they went naked, had no other Arms but a Bow and Arrows, and did not perceive they might be carry'd by Animals; they look'd upon the Sea as a vast Space, forbidden to Man, that it was joyn'd to the Heavens, and that beyond it was nothing: 'Tis true, after having spent whole Years in making hollow the trunks of great Trees with sharp Stones, they put themselves to Sea in these Trunks, and floated from Land to Land, as the Wind and Waves drove 'em; but how often was their Trough overset, and they forc'd to recover it again by swimming? So that (except when they were on the Land) it might be said they were continually swimming. And yet had any one but told 'em of another kind of Navigation incomparably more perfect and useful than their own, that they might easily pass over

that

infinite Space of Water, that they might stop in the middle of the Waves, and in some sense command the Winds, and make their Vessel go fast or slow as they pleas'd; in short, that this impassable Ocean should be no obstacle to their conversing with another different People; do you think they would have believed you? And yet at last that day is come; the unheard of and most surprizing Sight appears, vast great Bodies, with white Wings, are seen to fly upon the Sea, to vomit Fire from all Parts, and to cast on their Shoars an unknown People, all scaled with Iron, who dispose and govern Monsters as they please; carry Thunder in their Hands, and overthrow and destroy whoever resists 'em: From whence came they? Who brought 'em over the Sea? Who gave to 'em the Disposal of the Fire of Heaven? Are they Gods? Are they Sons of the Sun? For certainly they are not Men. Do but consider, Madam, the surprize of the *Americans*, there can be nothing greater; and after this, shall any

one

one say there shall never be a Commu
cation between the Moon and the Ea
Did the *Americans* believe there wo
ever be any between them and *Eur*
till it came to pass? 'Tis true, you m
pass this great Space of Air and Hea
which is between the Earth and t
Moon; but did not those vast Se
seem at first as impassable to the *A*
ricans? You rave, I think, *said* s
did you not own the *Americans* we
so ignorant, that they had not the le
conception of crossing the Sea; but w
who know a great deal more than the
can imagine and fancy the going throu
the Air, tho' we are assur'd it is not
be done. There is somewhat more th
Fancy, *I reply'd*, when it hath been a
ready practis'd, for several have foun
the secret of fastning Wings, which ho
them up in the Air, to move them
they please, and to fly over Rivers, a
from Steeple to Steeple; I cannot s
indeed they have yet made an Eag
Flight, or that it doth not cost no
and then a Leg or an Arm to one
the

these new Birds; but they may serve to represent the first Planks that were Launch'd on the Water, and which were the very beginning of Navigation; there were no Vessels then thought of to Sail round the World, and yet you see what great Ships are grown by little and little from those first Planks. The Art of Flying is but newly invented, it will improve by degrees, and in time grow perfect; then we may fly as far as the Moon. We do not yet pretend to have discover'd all things, or that what we have discover'd can receive no addition; and therefore, pray let us agree, there are yet many things to be done in the Ages to come. Were you to live a thousand Ages, *said the Countess*, I can never believe you will fly, but you must endanger your Neck. I will not, *I reply'd*, be so unmannerly as to contradict a fair Lady, but tho' we cannot learn the Art here, I hope you will allow they may fly better in the Moon; 'tis no great matter whether we go to them, or they come to us, we shall then

be

be the *Americans*, who knew nothing of Navigation, and yet there were very good Ships at t'other end of the World. Were it ſo, *ſaid ſhe*, the People in the Moon would have been here before now. All in good time, *ſaid I*, the *Europians* were not in *America* till at the end of ſome thouſands of Years, they were ſo long in improving Navigation to the point of croſſing the Ocean. The People in the Moon have already made ſome ſhort Voyages in the Air; they are exerciſing continually, and by degrees will be more expert, then we ſhall ſee 'em, and God knows how we ſhall be ſurpriz'd. It is unſufferable, *ſaid ſhe*, you ſhould banter me at this rate, and juſtifie your ridiculous Fancy by ſuch falſe reaſoning. I am going to demonſtrate, *ſaid I*, you reproach me very unjuſtly: Conſider, Madam, that the World is unfolded by degrees; for the Ancients were very poſitive, that the Torrid and Frigid Zones, were not inhabitable, by reaſon of their exceſſive Heat and Cold; and in the time of the

Romans,

Romans, the general Map of the World was but very little extended beyond that of their Empire; which tho' in one ſenſe, expreſs'd much Grandeur, in another ſenſe, was a ſign of as great Ignorance; however, there were Men found both in very hot and in very cold Countreys; ſo that you ſee the World is already encreas'd after that it was thought that the Ocean cover'd the whole Earth, except what was then diſcover'd; there was no talk then of the Antipodes, not ſo much as a thought of 'em, for who could fancy their Heels at top, and their Heads at bottom; and yet after all their fine reaſoning, the Antipodes were diſcover'd; here's now another half of the World ſtarts up, and a new Reformation of the Map; methinks this, Madam, ſhould reſtrain us, and teach us not to be ſo poſitive in our Opinions, the World will unfold it ſelf more to us hereafter; then we ſhall know the People in the Moon as well as we do now the Antipodes; but all things muſt be done in order, the whole

Earth must be first discover'd, and till we are perfectly acquainted with our own Habitation, we shall never know that of our Neighbours. Without fooling, *said the Countess*, you are so very profound in this Point, that I begin to think you are in earnest, and believe what you say. Not so neither, *said I*, but I would shew you how easie it is to maintain a chymerical Notion, that may (like some Opinions in Religion,) perplex a Man of Understanding, but never perswade him; there is nothing perswades but Truth, it hath no need of all its proofs, but enters naturally into our Understanding; and when once we have learn'd it, we do nothing but think of it. I thank you then, *said she*, for imposing on me no longer; for I confess your false reasoning disturb'd me, but now I shall sleep very quietly, if you think fit to go home.

The

The Third Evening.

THE Countess was so intent upon her Notions, that she would fain have engag'd me next day, to go on where I left off; but I told her, since the Moon and Stars were become the Subject of our Discourse, we would trust our Chymæras with no body else: At Night we went again into the Park, which was now dedicated to our Learned Conversation.

Well, Madam, *said I*, I have great News for you; that which I told you last Night, of the Moon's being inhabited, may not be so now: There is a new fancy got into my Head, which puts those People in great Danger. I cannot suffer it, *said she*; yesterday you were preparing me to receive a Visit from 'em, and now there are no such People in Nature: Once you would have me believe the Moon was inhabited; I surmounted the Difficulty I had, and will

will now believe it. You are a little too nimble. *I reply'd*; did I not advise you never to be entirely convinc'd in things of this nature, but to reserve half of your Understanding free and disengag'd, that you may admit of the contrary opinion, if there be any occasion. I care not for your Sentences, *said she*, let us come to matter of Fact. Are we not to consider the Moon as *Greenwich*? No, *said I*, the Moon doth not so much resemble the Earth, as *Greenwich* doth *London*: The Sun draws from the Earth and Water, Exhalations and Vapours, which mounting to a certain height in the Air, do there assemble, and form the Clouds; these uncertain Clouds are driven irregularly round the Globe, sometimes shadowing one Country, and sometimes another; he then who beholds the Earth from a-far-off, will see frequent alterations upon its surface, because a great Country overcast with Clouds, will appear dark or light, as the Clouds stay, or pass over it; he will see the Spots on the Earth often

change

change their Place, and appear, or disappear as the Clouds remove; but we see none of those changes wrought upon the Moon, which would certainly be the same, were there but Clouds about her; but on the contrary, all her Spots are fix'd and certain, and her light parts continue where they were at first, which truly is a great misfortune; for by this reason, the Sun draws no Exhalations or Vapours above the Moon; so that it appears she is a Body infinitely more hard, and solid than the Earth, whose subtil parts are easily separated from the rest, and mount upwards as soon as Heat puts them in Motion: But it must be a heap of Rock and Marble, where there is no Evaporation; besides, Exhalations are so natural and necessary where there is Water, that there can be no Water at all, where there is no Exhalation; and what sort of Inhabitants must those be, whose Country affords no Water, is all Rock, and produceth nothing? Very fine, *said she*, you have forgot since you assur'd

me, we might from hence distinguish Seas in the Moon; nay? Your or your Friends were Godfathers to some of 'em. Pray, what is become of your *Caspian* Sea, and your Black Lake? All Conjecture, Madam, *I replyd*, tho' for your Ladyship's sake, I am very sorry for it; for those dark places we took to be Seas, may perhaps be nothing but large Cavities; 'tis hard to guess aright at so great a distance. But will this suffice then, *said she*, to extirpate the People in the Moon? Not altogether, *I reply*, we will neither determine for, nor against them. I must own my weakness (if it be one) *said she*, I cannot be perfectly undetermin'd as you would have me to be, but must believe one way, or the other; therefore pray do me quickly in my Opinion, as to the Inhabitants of the Moon, preserve or annihilate them, as you shall think fit; and yet methinks I have a strange inclination for 'em, and would not have 'em destroy'd, if it were possible to save 'em. You know, Madam, *said I*, I can-

deny

deny you nothing; the Moon shall be no longer a Desart, but to do you service, we will repeople her. Since to all appearance, the Spots in the Moon do not change, I cannot conceive there are any Clouds about her, that sometimes obscure one part, and sometimes another; yet this doth not hinder, but that the Moon sends forth Exhalations, and Vapours. Our Clouds which we see in the Air, are nothing but Exhalations and Vapours, which at their coming out of the Earth, were separated into such minute Particles, that they could not be discern'd; but as they ascend higher, they are condens'd by the Cold, and by the re-union of their Parts, are render'd visible; after which they become great Clouds, which fluctuate in the Air, till they return back again in Rain; however these Exhalations and Vapours do sometimes keep themselves so dispers'd, that they are imperceptible; or if they do assemble, it is in forming such subtil Dews, that they cannot be discern'd to fall from any Cloud. It may likewise

happen, that the Vapours which go out of the Moon (for it is incredible that the Moon is such a Mass, that all its Parts are of an equal Solidity, all at rest one with another, and all incapable of any alteration from the efficacy of the Sun; I am sure we are yet unacquainted with such a Body: Marble it self is of another Nature, and even that which is most Solid, is subject to Change and Alteration; either from the secret and invisible motion it hath within it self, or from that which it receives from without) it may so happen then, that the Vapours which issue from the Moon, may not assemble round her in Clouds, and may not fall back again in Rain, but only in Dews. It is sufficient for this, that the Air with which the Moon is environ'd, (for it is certain that the Moon is encompassed with Air as well as the Earth) be a little different from our Air, and the Vapours of the Moon a little different from those of the Earth, which is very probable. Hereupon the matter being otherwise dispos'd in the Moon than on the Earth,

the

the Effects must be different; tho' it is of no great consequence whether they are or no; for from the moment we have found an inward motion in the parts of the Moon, or produced by foreign Causes, here is enough for the new birth of its Inhabitants, and a sufficient and necessary fund for their Subsistence. This will furnish us with Corn, Fruit, Water, according to the Custom or Manner of the Moon, which I do not pretend to know; and all proportion'd to the wants and use of the Inhabitants, with whom I pretend to be as little acquainted. That is to say, *reply'd the Countess*, you know all is very well, without knowing how it is so, which is a great deal of Ignorance upon a very little Knowledge; however I comfort my self, that you have given the Moon her Inhabitants again, and have wrap'd her in an Air of her own, without which a Planet would seem but very naked.

'Tis these two different Airs, *said I*, that hinder the Communication of the two Planets; if it was only flying,

flying, as I told you yesterday, who knows but we may improve it to perfection, tho' I confess there is but little hopes of it; the great distance between the Moon and the Earth is a difficulty not easily to be surmounted, yet were the distance but inconsiderable, and the two Planets almost contiguous, it would be still impossible to pass from the Air of the one, into the Air of the other. The Water is the Air of Fishes, they never pass into the Air of the Birds, nor the Birds into the Air of the Fish; and yet 'tis not the distance that hinders them, but both are imprison'd by the Air they breath in; we find our Air consists of thicker and grosser Vapours than the Air of the Moon. So that one of her Inhabitants arriving at the Confines of our World, as soon as he enters our Air will inevitably drown himself, and we shall see him fall dead on the Earth.

I should rejoyce at a Wreck, *said the Countess*, as much as my Neighbours on the Coast of *Sussex*; how pleasant would

would it be to see 'em lie scatter'd on the ground, where we might consider at our ease, their extraordinary Figures? but what, *said I*, if they would swim on the outward surface of our Air, and be as curious to see us, as you are to see them; should they Angle or cast a Net for us, as for so many Fish, would that please you? Why not? *Said the Countess*; For my part I would go into their Nets of mine own accord, were it but for the pleasure to see such strange Fishermen.

You would be very Sick, *said I*, when you were drawn to the top of our Air, for it is not respirable in all its extent, as may be seen on the tops of some very high Mountains; and I admire that they who have the folly to believe that our *Fairies*, whom they allow to be Corporeal, and to inhabit the most pure and refin'd Air, do not tell us that the reason why they give us such short and seldom visits, is that there are very few among them that can dive, and those that can, if it be possible to

get

get through the thick Air where we are, cannot stay half so long in it, as one of the worst of Sir *Harry Blount's* Sponge-gatherers. Here then are natural Barricades, which defend the passage out of our World, as well as the Entry into that of the Moon; so that since we can only guess at that World, let us fancy all we can of it. For Example, I will suppose that we may see there the Firmament, the Sun, and the Stars, of another colour than what they are here; all these appear to us through a kind of Natural Spectacles, which change and alter the Objects. These Spectacles are our Air, mix'd as it is with Vapours and Exhalations, and which doth not extend it self very high. Some of our Modern Philosophers pretend, of it self it is blue, as well as the Water of the Sea, and that this colour neither appears in the one nor in the other, but at a great depth; the Firmament, say they, where the fix'd Stars are fastned, hath no peculiar light of its own, and by consequence must appear black, but we see it through

the

Air which is blue, and therefore to it appears blue; which if so, the beams of the Sun and Stars cannot pass through the Air without being ting'd a little with its colour, and losing as much of their own; yet were the Air of no colour, it is very certain, that through a great Mist the light of a *Flambeau* at some distance appears reddish, though it be not its true natural Colour. Our Air is nothing but a great Mist, which changeth the true Colour of the Sky, of the Sun, and of the Stars; it belongs only to the Celestial Matter to bring us the Light and Colours as they really are in all their purity; so that since the Air of the Moon is of another nature than our Air, or is stain'd of another Colour, or at least is another kind of Mist, which causeth other alterations to the Colours of the Celestial Bodies; in short, as to the People of the Moon, their Spectacles through which they see every thing are chang'd.

If it be so, *said the Countess*, I prefer my abode before that of the Moon; for

for I cannot believe the Celestial Colours are so well suited as they are here; for if you will let us put green Suns on a red Sky, they cannot be so agreeable as Stars of Gold on an Azure Firmament. To hear you, *said I*, one would think you were chusing a Petticoat, or a suit of Knots; but believe me, Nature hath as good a Fancy as Mrs. *Harnesse*; leave it to her to chuse Colours for the Moon, and I'll engage they shall be well sorted; she will not fail to vary the Prospect of the Universe, at every different point of Sight, and always the Alteration shall be very agreeable. I know very well, *said the Countess*, her Skill in this Point; she is not at the charge of changing the Objects, but only the Spectacles, and has the credit of this great variety, without being at any expence; with a blue Air, she gives us a blue Firmament; and perhaps with a red Air, she gives to the Inhabitants of the Moon a red Firmament; and yet still it is but the same Firmament; nay, I am of opinion, that

ath plac'd a sort of Spectacles in our
magination, through which we see all
ings, and which to every particular
an change the Objects. *Alexander*
ok'd on the Earth as a fit place to e-
blish a great Empire, it seem'd to *Ce-*
es a proper Residence for *Astræa*, and
appear'd to a Philosopher, a great Pla-
et in the Heavens, covered with Fools;
do not believe the Sights vary more
tween the Earth and the Moon, than
ey do between one Man's Fancy and
others.

This change in our Imaginations, *said*
, is very surprizing; for they are still
e same Objects, tho' they appear dif-
rent; when in the Moon, we may see
ther Objects we do not see here, or at
ast, not see all there we do see here;
perhaps in that Country they know no-
hing of the Dawn and the Twilight,
efore the Sun riseth, and after the Sun
ets; the Air which encompasseth, and
s elevated above us, receives the Rays,
o that they cannot strike on the Earth;
nd being gross, stops some of them, and

sends

finds 'em to us, tho' indeed they were never naturally design'd us; so that the Day-break and the Twilight are a favour which Nature bestows on us; they are a Light which regularly we should not have, and which she gives us over and above our due; but in the Moon, where apparently the Air is more pure, and therefore not so proper to send down the Beams it receives from the Sun before his rising, and after his setting, you have not that Light of Grace (as I may call it) which growing greater by degrees, doth more agreeably prepare you for the arrival of the Sun, and which growing weaker, and diminishing by degrees, doth insensibly prepare you for the Sun's departure: But you are in a profound darkness, where a Curtain (as it were) is drawn all on a sudden, your Eyes are immediately dazled with the whole Light of the Sun, in all its glory and brightness; so likewise, you are on a sudden surpriz'd with utter Darkness; the Night and the Day have no medium between them, but you fall

a moment from one extreme into the other. The Rainbow likewise is not known to them in the Moon: for if the Dawn is an effect of the grosness of the Air and Vapours, the Rainbow is form'd in the Clouds, from whence the Rain falls; so that the most beautiful things in the World, are produc'd by those things which have no beauty at all. Since then there are no Vapours thick enough, nor no Clouds of Rain about the Moon, farewell Dawn, adieu Rainbow: What must Lovers do for Similies in that Country, when such an inexhaustible Magazine of Comparisons is taken from them?

I doubt not, *said the Countess*, but there are those in the Moon as good at Simily as the greatest Beau in *Covent-Garden*; and had they neither Sun nor Stars, Pearls nor Rubies, Roses nor Lillies, yet could say as many fine things to a Visor-Mask, as the perfect Wit at the *Puppet-Show*; and they are well enough recompenc'd for the loss of our Dawn and Rainbow; for by the same reason,

they have neither Thunder nor Lightning, both which are formed in the Clouds; how glorious are their days, the Sun continually shining? How pleasant their Nights, not the least Star is hid from them? They never hear of Storms or Tempests, which certainly are in effect of the wrath of Heaven: Do you think then they stand in need of our pity? You are describing the Moon, *I reply'd*, like an enchanted Palace; but do you think it is so pleasant to have a scorching Sun always over our Heads, and not the least Cloud to moderate its Heat? Tho' I fancy 'tis for this reason that Nature hath made great Cavities in the Moon; we can discern 'em easily with our Telescopes, for they are not Mountains, but so many Wells or Vaults in the middle of a Plain; and what do we know but the Inhabitants of the Moon, being continually broil'd by the excessive heat of the Sun, do retire into those great Wells; perhaps they live no where else, and 'tis there they build 'em Cities; for we still see in the Ruines

of

of old *Rome*, that that part of the City which was under ground, was almost as large as that which was above ground. I fancy, during the late Siege of *Buda*, they liv'd there as they do in the Moon, or 'tis but going to the *Fountain-Tavern* Cellar, where the several Vaults, are as so many high Streets, the Vats, Pipes, Hogsheads, so many different Edifices, and the Drawers and Coopers, like so many *Trogloditer*. I perceive you laugh at me, yet if I may be so free with a fair Lady, you deserve it much better than I; for you believe the People in the Moon must live upon the surface of their Planet, because we do so upon ours; but quite contrary, since we dwell upon the Superficies of our Planet, they should not dwell upon the Superficies of their Planet; if things differ so much in this World, what must they do in another?

'Tis no matter, *said the Countess*, I can never suffer the Inhabitants of the Moon to live in perpetual darkness. You will be more concern'd for 'em, *I re-*

ply'd, when I tell you that one of the ancient Philoſophers did long ſince diſcover the Moon to be the abode of the bleſſed Souls departed out of this Life, and that all their Happineſs conſiſted in hearing the Harmony of the Spheres, that is the Muſick (I had like to have ſaid Noiſe) which is made by the Motion of the Celeſtial Bodies; if you have ſeen a *Raree Show*, you will eaſily comprehend it: But becauſe the Philoſopher pretends to know exactly all they do there, he tells you, that when the Moon is obſcur'd by the ſhadow of the Earth, they no longer hear the Hevenly Muſick, but howl like ſo many Souls in Purgatory; ſo that the Moon taking pity of 'em, makes all the haſt ſhe can to get into the Light again. Methinks then, *ſaid ſhe*, we ſhould now and then ſee ſome of the Bleſſed Souls arrive here from the Moon, for certainly they are ſent to us. I confeſs indeed, *ſaid I*, it would be very pleaſant to ſee different Worlds; ſuch a Voyage, tho' but in Imagination, is ve-

ry delightful; what would it be in effect? It would be much better certainly than to go to *Japan*, which at best, is but crawling from one end of the World to t'other, and after all to see nothing but Men. Well then, *says she*, let us travel over the Planets, as fast as we can; what should hinder us? Let us place our selves at all the different Prospects, and from thence consider the Universe. But first, have we any thing more to see in the Moon? I believe not, *I reply'd*; at least, you have seen all I can shew you. Coming out of the Moon towards the Sun, we see *Venus*, which puts me again in mind of *Greenwich*. *Venus* turns upon her self, and round the Sun, as well as the Moon; they likewise discover by their Telescopes, that *Venus* like the Moon, (if I may speak after the same manner) is sometimes new, sometimes full, and sometimes in the Wain, according to the divers Situations she is in, in relation to the Earth.

The Moon, to all appearance, is inhabited, why ſhould not *Venus* be ſo too? You are ſo full of your Whys, and your Wherefores, *ſays ſhe*, interrupting me, that I fancy you are ſending Colonies to all the Planets. You may be certain, ſo I will, *I reply'd*, for I ſee no reaſon to the contrary; we find that all the Planets are of the ſame nature, all obſcure Bodies, which receive no Light but from the Sun, and then ſend it to one another; their Motions are the ſame, ſo that hitherto they are alike; and yet if we are to believe that theſe vaſt Bodies are not inhabited, I think they were made but to little purpoſe; why ſhould Nature be ſo partial, as to except only the Earth? But let who will ſay the contrary, I muſt believe the Planets are peopled as well as the Earth. I find, *ſays the Counteſs*, with ſome concern, a Philoſopher will never make a good Martyr, you can ſo quickly ſhift your Opinion, 'twas not many Minutes ſince the Moon was a perfect Deſart, now the reſt of the Planets are inhabited. Why truly, Madam,

ſaid

said I, there is a time for all things, and your true Philosopher believes any thing, or nothing, as the Maggot bites. Had you taken me in the sceptical Vein, I would have as soon granted a Nation in a Mustard-Ball, as a living Creature in the Moon; but the tide is turn'd, and all the Planets are Peopled like an Ant-hill; yet, Raillery apart, this is not so very improbable as you think it; for do you believe we discover, (as I may say) all the inhabitants of the Earth? there be as many kinds of invisible as visible Creatures; we see from the Elephant to the very Hand-worm, beyond which our Sight fails us, and yet counting from that minute Creature, there are an infinity of lesser Animals, which were they perceptible, would be as little in comparison with a Mite, as a Mite is of an Ox. How lately have our Virtuoso's found out the Pepper-Worms, which in the least drop of Water appear like so many Dolphins, sporting in the Ocean; nay, they tell you that the sharpness of Vinegar consists in the fierce-

nefs of the little Animals that bite you by the Tongue; not to name the blue or Plums, and twenty Experiments of the like nature.

Nay, to shew you that they can see as far into a Millstone as *Descartes* himself, they have discover'd that several, even of the most solid Bodies, are nothing but an immense swarm of imperceptible Animals: Do but consider this little Leaf; why it is a great World, of a vast extent, what Mountains, what Abysses are there in it? The Insects of one side, know no more of their Fellow-Creatures on t'other side, then you and I can tell what they are now doing at the Antipodes; is it not reason then that a great Planet should be inhabited? In the hardest Stones, for Example, in Marble, there are infinity of Worms, which fill up the vacuums, and feed upon the substance of the Stone; fancy then millions of living Creatures to subsist many years on a grain of Sand; so that were the Moon but one continued Rock, she should be gnaw'd by these invisible Mites,

(as

(as if she were a green Cheese) rather than not be inhabited: In short, every thing is animated, and the Stones upon *Salisbury-Plain* are as much alive, as a Hive of Bees; imagine then those Animals which are yet undiscovered, and add them and those which are but lately discover'd, to those we have always seen, you will find the Earth swarms with Inhabitants. Why then should Nature, which is fruitful to an excess here, be so very barren in the rest of the Planets? I must own, *said the Countess*, you have convinc'd my Reason, but you have confounded my Fancy, with such variety, that I cannot imagine how Nature, which hates Repetitions, should produce so many different kinds. There is no need of Fancy, *I reply'd*, do but trust your Eyes, and you will easily perceive how Nature diversifies in these several Worlds.

All humane Faces, in general, are of the same Model, and yet the *Europeans* and the *Africans* have two particular Moulds; nay, commonly every Family have

have a different Form; what secret then has Nature to shew so much variety in the single Face? Our World, in respect of the Universe, is but a little Family; all whose Faces have some resemblance; in another Place, there is another Family, whose Faces have a different Air and Fashion; the difference too increaseth with the distance, for whosoever shall see an Inhabitant of the Moon, and an Inhabitant of the Earth, would soon perceive they were nearer Neighbours than one of the Earth, and one of *Saturn*; here, for Example, we have the use of Voice, in another World, they speak by Signs, and at a greater distance they do not speak at all; here our Reason is form'd by Experience, in the next World, Experience contributes little towards it; and in the next to that, old Men know no more than Children; here we are troubled more with what is to come, than with what is past; farther off, they are not concern'd with either, which by the way, I think, is much the better: Here, 'tis thought we want

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a sixth Sense, which would teach us many things, of which we are now ignorant; this sixth Sense, is apparently in another World, where they want one of the five which we enjoy; nay, perhaps there is a much greater number of Senses, but in the Partition we have made of 'em with the Inhabitants of the other Planets, there are but five fall'n to our share, with which we are well contented, for want of being acquainted with the rest: Our Sciences have bounds, which the wit of Man could never pass; there is a point where they fail us on a sudden, the rest is reserv'd for other Worlds, where somewhat which we know, is unknown to them, This Planet enjoys the pleasures of Love, but lies desolate in several places by the fury of War; in another Planet, they enjoy a perpetual Peace, yet in the midst of that Peace, know nothing of Love, and time lies on their hands; in a word, that which Nature practises here in little, in distributing her Gifts among Mankind, she does at large in other Worlds,

where

where she makes use of that admirable secret she hath to diversifie all things, and at the same time make 'em equal, by compensating for the inequality; this I confess is on the Borders of Nonsense, but a Man is ne'er the less a Philosopher for being a little obscure, if not unintelligible.

But is it not time, Madam, to be serious, how will you dispose of all these Notions? Trouble not your self, *says she*, Fancy is a great Traveller; I already comprehend these several Worlds, and represent to my self their different Characters and Customs; some of 'em I assure you, are very extraordinary; I see at this moment, a thousand different Figures, tho' I cannot well describe 'em. Oh leave 'em, *I reply'd*, to your Dreams, they will represent 'em very faithfully.

The

The Fourth Evening.

I Have been told of a Physician that makes his Patients dream as he pleases, by prescribing such a Specifick for their Supper, as works those impressions he would have on the Fancy; of what use he may be to the modern Poets, I leave to the Curious; and return to the Countess, who either did not Dream at all, or nothing to the purpose; so that continuing our Voyage to the other Worlds, we could only guess at their Inhabitants. We were come to *Venus*, and I told her, that *Venus* certainly turn'd on it self, tho' no body could tell in what time, and consequently were ignorant how long her Day lasted; but her Year was compos'd of eight Months, because 'tis in that time she turns round the Sun: And seeing *Venus* is forty times less than the Earth, the Earth appears (to them in *Venus*) to be a Planet, forty times bigger than *Venus* appears to us

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on the Earth; and as the Moon is forty times leſſer than the Earth, ſo ſhe ſeems to be juſt of the ſame Magnitude, to the Inhabitants of *Venus*, as here *Venus* ſeems to us.

I ſee then, *ſays the Counteſs*, that the Earth is not to *Venus*, what *Venus* is to the Earth; I mean, that the Earth is too big to be the Mother of Love, or the Shepherd's Star to *Venus*; but the Moon, which appears to *Venus*, of the ſame bigneſs that *Venus* appears to us, is aſſigned to be the Mother of Love, and the Shepherd's Star to *Venus*; for ſuch names are only proper for a little brisk airy Planet, bright and ſhining as the Goddeſs her ſelf. Oh, bleſſed Moon, how happy art thou, to preſide over the Amours of thoſe gallant People, where all they ſay, is ſoft and moving, and perfectly refin'd from the droſs of our Wits, who are fitter for a Bear-Garden than a *Circle*? How groſs is their Court-ſhip? how mean their Raillery? Without any diſtinction of time, place, or perſon; they make Love, (as they call it) but one way,

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and the form is the same, at a Farce, or Funeral. Be not so very severe, *I reply'd*, if some of our *Beaux* speak plain *English*, some of your *Belles*, like 'em ne're the worse for't: The art of Love is as much improv'd as the art of War, the Generals of this Age take a Town in two Days, which in the last, held out as many Years; and the Roses, Lillies, Pearls, and Rubies, (a whining Lover's train of Artillery) are grown as useless as Bows and Arrows: Tho' after all, I must own they have another Standard in the Planet *Venus*; there *Clelia* and *Partheniſſa*, is below the language of Grooms and Chamber-Maids; and every Porter and Car-Man a perfect Sir *Courtly*; but then consider the difference of Climats; *Venus* is much nearer than the Earth is to the Sun, from whence she receives a more vigorous and active influence.

I find, *says the Countess*, it is safe enough to guess at the Inhabitants of *Venus*; they resemble what I have read of the *Moors* of *Granada*, who were a little

little black People, ſcorch'd with the Sun, witty, full of Fire, very Amorous, much inclin'd to Muſick and Poetry, and ever inventing of Maſques and Turnaments in honour of their Miſtreſſes. Pardon me, Madam, *ſaid I*, you are little acquainted with the Planet; *Granada* in all its Glory, was a perfect *Greenland* to it; and your gallant *Moors*, in compariſon with that People, were as ſtupid as ſo many *Laplanders*.

But what do you think then of the Inhabitants of *Mercury*? They are yet nearer to the Sun, and are ſo full of Fire, that they are abſolutely mad; I fancy, they have no memory at all, like moſt of the *Negroes*; that they make no reflections, and what they do is by ſudden ſtarts, and perfect hap-hazard; in ſhort, *Mercury* is the Bedlam of the Univerſe; the Sun appears to them much greater than it does to us, becauſe they are much nearer to it than we; it ſends them ſo vaſt and ſtrong a Light, that the moſt glorious Day here, would be no more with them than a declining twilight;

twilight: I know not if they can distinguish Objects, but the heat to which they are accustom'd, is so excessive, that they would be starved with cold in the Torrid Zone; their Year is but three Months, but we know not the exact length of their Day, because *Mercury* is so little, and so near the Sun; it is (as it were) lost in his Rays, and is very hardly discover'd by the Astronomers; so that they cannot observe how it moves on its Centre, but because it is so little, fancy it compleats its Motion in a little time; so that by consequence, the Day there is very short, and the Sun appears to them like a vast fiery Furnace at a little distance, whose Motion is prodigiously swift and rapid; and during their Night, *Venus* and the Earth (which must appear considerably big) give light to them; as for the other Planets which are beyond the Earth, towards the Firmament, they appear less to them in *Mercury*, than they do to us here, and they receive but little light from them, perhaps none at all; the fix'd Stars like-

wise seem less to them, and some of 'em totally disappear, which were I there I should esteem a very great loss.

What signifies the loss of a few fix'd Stars, *says the Countess*? I pity 'em for the excessive heat they endure; let us give 'em some relief, and send *Mercury* a few of the refreshing Showers they have sometimes four Months together in the hottest Countries during their greatest extremity. Your Fancy is good, Madam, *I reply'd*, but we will relieve 'em another way; In *China* there are Countries which are extreamly hot by their Situation: Yet in *July* and *August* are so cold, that the Rivers are Frozen; the reason is, they are full of Salt-Petre, which being exhal'd in great abundance by the excessive heat of the Sun, makes a perfect Winter at Midsummer. We will fill the little Planet with Salt-Petre, and let the Sun shine as hot as he pleases. And yet after all, who knows but the Inhabitants of *Mercury* may have no occasion either for Rain, or Salt-Petre. If it is a certain truth, that Nature

never

never gives life to any Creature, but where that Creature may live; then thro' Custom, and Ignorance of a better Life, those People may live happily.

After *Mercury* comes the Sun, but there is no possibility of peopling it, nor no room left for a wherefore. By the Earth which is Inhabited, we judge that other Bodies of the same Nature may be likewise inhabited; but the Sun is a Body not like the Earth or any of the Planets, the Sun is the source or Fountain of Light, which tho' it is sent from one Planet to another, and receives several alterations by the way, yet all originally proceeds from the Sun, he draws from himself that precious substance which he emits from all sides, and which reflects when it meets with a solid Body, and spreads from one Planet to another those long and vast trains of Light which cross, strike thro', and intermingle in a thousand different fashions, and make (if I may so say,) the Richest Tissu's in the World. The Sun likewise is placed

in the Centre, from whence with moſt convenience, he may equally diſtribute and animate by his heat; it is then a particular Body, but what ſort of Body has often puzled better heads than mine. It was thought formerly a Body of pure Fire, and that Opinion paſſed currant till the beginning of this Age; when they perceived ſeveral ſpots on its ſurface. A little after they had diſcover'd new Planets, (of which, hereafter) which ſome ſaid were thoſe Spots; for thoſe Planets moving round the Sun, when they turned their dark half to us, muſt neceſſarily hide part of it; and had not the Learned with theſe pretended Planets made their Court before to moſt of the Princes in *Europe*, giving the name of this Prince to one, and of that Prince to another Planet; I believe they would have quarrel'd who ſhould be Maſter of theſe Spots, that they might have nam'd them as they pleas'd.

'Twas but t'other day, *ſays the Counteſs*, you were deſcribing the Moon, and call'd ſeveral places by the names of the

the most famous Astronomers. I was pleased with the fancy; for since the Princes have seiz'd on the Earth; 'tis fit the Philosophers [who are as proud as the best of 'em] should reserve the Heavens for themselves without any Competitors. Oh! trouble not your self, *said I*, the Philosophers make the best advantage of their Territories; and if they part with the least Star, 'tis on very good terms; let me tell you, an Acre of Land in *England*, is worth ten thousand in the Moon, but the Spots on the Sun are fallen to nothing; the actions of *Pensilvania* are not half so low, 'tis now discover'd that they are not Planets, but Clouds, Steams, or Dross, which rise upon the Sun, sometimes in great quantity, sometimes in less; sometimes they are dark, sometimes clear, sometimes they continue a great while, and sometimes they disappear as long. It seems the Sun is a Liquid Matter, some think of melted Gold, which boils over (as it were) continually, and by the force of its Motion casts

the Scum or Droſs on its ſurface, where it is conſumed, and others ariſe. Imagine then what ſtrange Bodies theſe are, when ſome of 'em are as big as the Earth; What a vaſt quantity muſt there be of the melted Gold, and what muſt be the extent of this great Sea of Light and Fire which they call the Sun? Others ſay, the Sun appears through their Telleſcopes, [which are the Aſtronomers Spectacles] full of Mountains which vomit Fire continually, and are joyn'd together like Millions of *Etna's*. Yet there are thoſe who ſay theſe burning Mountains are pure Viſion, caus'd by a fault in the Spectacles; but what ſhall we truſt, if we muſt diſtruſt our Telleſcopes to which we owe the knowledge of ſo many new Objects? But let the Sun be what it will, it cannot be at all proper for habitation; and what pity 'tis not, for how pleaſant would it be? You might then be at the Centre of the Univerſe, where you would ſee all the Planets turn regularly about you; but now we know nothing but extravagant

 fancies,

fancies, because we do not stand in the proper place; there is but one place in the World where the study or knowledge of the Stars is easily obtain'd, and what pity 'tis there is no body there? You forget your self sure, *says she*, were you in the Sun you would see nothing, neither Planets nor fix'd Stars, doth not the Sun efface all? So that could there be any Inhabitants there, they might justly think themselves the only people in Nature.

I own, *said I*, my mistake; I was thinking of the Situation of the Sun, and not of the effect of its Light: I thank you for your correction, but must take the boldness to tell you, that you are in an errour, as well as my self; for were there Inhabitants in the Sun, they would not see at all, either they could not bear the strength of its light, or for want of a due distance, they could not receive it; so that things well consider'd, all the People there must be stark blind, which is another reason why the Sun cannot be inhabited; but let us pur-

fue our Voyage. We are now arriv'd at the Centre, which is always the bottom, or loweſt place of what is round; if we go on, we muſt aſcend; we ſhall find *Mercury*, *Venus*, the Earth, the Moon, all the Planets we have already viſited; the next is *Mars*: *Mars* hath nothing curious that I know of, his Day is not quite an hour longer than ours, but his Year is twice as much as our Year; he is a little leſs than the Earth; and the Sun ſeems not altogether ſo large and ſo bright to him, as it appears to us: But let us leave *Mars*, he is not worth our ſtay: But what a pretty thing is *Jupiter*, with his four Moons, or Yeomen of the Guard; they are four little Planets that turn round him, as our Moon turns round us. But why, *ſays ſhe, interrupting me*, muſt there be Planets to turn round other Planets, that are no better than themſelves? I ſhould think it would be more regular and uniform, that all the Planets, little and great, without any diſtinction, ſhould have one and the ſame Motion round the Sun.

Ah, Madam, *said I*, if you knew what were *Descartes*'s Whirlpools or Vortex's, (whose Name is terrible, but their idea pleasant) you would not talk as you do. Must my Head, *says she, smiling*, turn round to comprehend 'em, or must I become a perfect Fool to understand the mysteries of Philosophy? Well, let the World say what it will, go on with your Whirlpools. I will, *said I*, and you shall see the Whirlpools are worthy of these transports: That then which we call a Whirlpool, or Vortex, is a Mass of Matter, whose parts are separated or detach'd one from another, yet have all one uniform Motion, and at the same time, every one is allow'd, or has a particular Motion of its own, provided it follows the general Motion: Thus a Vortex of Wind, or Whirlwind, is an infinity of little particles of Air, which turn round all together, and involve whatever they meet with. You know the Planets are born up by the Celestial Matter, which is prodigiously subtile and active; so that this

great

great Mass, or Ocean of Celestial Matter, which flows as far as from the Sun to the fix'd Stars, turns round, and bears the Planets along with it, making them all turn after the same manner round the Sun, who possesses the Centre, but in a longer or shorter time, according as they are farther or nearer in distance to it; there is nothing to the very Sun, which does not turn, but he turns on himself, because he is just in the middle of this Celestial Matter; and you must know by the way, that were the Earth in his place, it must turn on it self, as the Sun does. This is the great Vortex, of which the Sun is Lord; yet at the same time, the Planets make little particular Vortex's, in imitation of that of the Sun, each of 'em in turning round the Sun, doth at the same time turn round it self, and makes a certain quantity of Celestial Matter turn round it likewise, which is always prepar'd to follow the Motion the Planet gives it, provided it is not diverted from its general Motion; this then is the particular

ar Vortex of the Planet, which puſhes it as far as the ſtrength of its Motion reaches; and if by chance, a leſſer Planet falls into the Vortex of a greater Planet, it is immediately born away by the greater, and is indiſpenſably forc'd to turn round it, tho' at the ſame time, the great Planet, the little Planet, and the Vortex which encloſes 'em, all turn round the Sun: 'Twas thus at the beginning of the World, when we made the Moon follow us, becauſe ſhe was within the reach of our Vortex, and therefore wholly at our diſpoſe: *Jupiter* was ſtronger, or more fortunate than we, he had four little Planets in his neighbourhood, and he brought 'em all four under his ſubjection; and no doubt, we, tho' a principal Planet, had had the ſame Fate, had we been within the Sphere of his Activity; he is ninety times bigger than the Earth, and would certainly have ſwallow'd us into his Vortex; we had then been no more than a Moon in his Family, when now we have one to wait on us; ſo that you

you see the advantage of Situation, decides often all our good Fortune.

But pray, *says she*, who can assure us we shall still continue as we do now? If we should be such Fools as to go near *Jupiter*, or be so ambitious as to approach us, what will become of us? For if (as you say) the Celestial Matter is continually under this great Motion, it must needs agitate the Planets irregularly; sometimes drive 'em together, and sometimes separate 'em. Luck is all, *said I*; we may win as well as lose, and who knows, but we should bring *Mercury* and *Venus* under our Government; they are little Planets, and cannot resist us; but in this particular, Madam, we need not hope or fear; the Planets keep within their own bounds, and are oblig'd (as formerly the Kings of *China* were) not to undertake new Conquests. Have you not seen when you put Water and Oyl together, the Oyl swims a-top; and if to these two Liquors, you add a very light Liquor, the Oyl bears it up, and it will not sink to the Water: But

put

put an heavier Liquor, of a juſt weight, and it will paſs through the Oyl, which is too weak to ſuſtain it, and ſink till it comes to the Water, which is ſtrong enough to bear it up; ſo that in this Liquor, compos'd of two Liquors which do not mingle two Bodies of an unequal weight, will naturally aſſume two different Places; the one will never aſcend, the other will never deſcend: Fancy then that the Celeſtal Matter which fills this great Vortex, hath ſeveral reſting places, one by another, whoſe weight are different, like that of Oyl, Water, and other Liquors; the Planets too are of a different weight, and conſequently, every Planet ſettles in that place which has a juſt ſtrength to ſuſtain and keep it equilibrate, ſo you ſee 'tis impoſſible it ſhould ever go beyond.

Would to God, *ſays the Counteſs*, our World were as well regulated, and every one among us knew their proper Place. I am now in no fear of being over-run by *Jupiter*; and ſince he lets us alone in our Vortex, with our Moon, I do not

envy

envy him the four which he hath. Did you envy him, *I reply'd*, you would do him wrong, for he has no more than what he has occasion for; at the distance he is from the Sun, his Moons receive, and send him but a very weak Light; it is true, that as he turns upon himself in ten hours, his Nights, by consequence, are but five hours long; so one would think there is no great occasion for four Moons, but there are other things to be considered. Here under the Poles, they have six Months Day, and six Months Night, because the Poles are the two extremities of the Earth, the farthest removed from those places where the Sun is over 'em in a perpendicular Line. The Moon seems to keep almost the same Course as the Sun, and if the Inhabitants of the Poles see the Sun during one half of his Course of a Year, and during the other half, do not see him at all; they see the Moon likewise during one half of her Course of a Month; that is, she appears to 'em fifteen Days, but they do not see her during

the other half. *Jupiter's* Year is as much as twelve of ours, so that there must be two oppofite extremities in that Planet, where their Night and their Day are six Years each. A Night six Years long, is a little disconsolate, and 'tis for that reason, I suppose, they have four Moons; that which (in regard to *Jupiter*) is uppermost, finisheth its Course about him in seventeen Days, the second in seven, the third in three Days and an half, and the fourth in two and forty Hours; and tho' they are so unfortunate as to have six Years Night, yet their Course being exactly divided into halves, they never pass above one and twenty Hours, wherein they do not see at least the last Moon, which is a great comfort in so tedious a darkness; so that be where you will, these four Moons are sometimes the prettiest sight imaginable; sometimes they rise all four together, and then separate according to the inequality of their Course; sometimes they are all in their Meridian, rang'd one above another, sometimes you see 'em at equal distances

distances on the Horizon, sometimes when two rise, the other two go down. Oh, how I should love to see this pleasant sport of Eclipses; for there is not a Day passes but they Eclipse the Sun, or one another; and they are so accustom'd to this diversion in *Jupiter*, that the late Duke of *B——m* in his *Rehearsal*, brought the dance of Eclipses from that Planet, as now most of our modish Dances come out of *France*.

Well, *says the Countess*, I hope you will People these four Moons, tho' you say they are but little secondary Planets, appointed to give light to another Planet during its Night. Do not doubt it, *I reply'd*; these Planets are not a jot the worse to be inhabited, for being forc'd to turn round another Planet of greater consequence. I would have then, *says she*, the People of these four Moons, to be so many Colonies under *Jupiter's* Government; they should receive their Laws and Customs from him. Would it not be convenient too, *said I*, that they should send Deputies with Addresses

dresses to him; for he hath certainly a more absolute command over his Moon, than we have over ours; tho' his Power after all, is but imaginary, and consists chiefly in making 'em afraid; for that Moon which is nearest to him, sees that he is three hundred and sixty times bigger than our Moon appears to us; for in truth, he is so much bigger than she; he is also much nearer to them, than our Moon is to us, the which makes him appear the greater, so that this formidable Planet hangs continually over their Heads, at a very little distance, and if the *Gauls* were afraid heretofore that the Heavens would fall on 'em, I think the Inhabitants of that Moon may well be apprehensive that *Jupiter* will at some time or other overwhelm 'em. They are, *says she*, I fancy, possess'd with that fear, because they are not concern'd at Eclipses: Every one has their due folly; we are afraid of an Eclipse, and they, that *Jupiter* will fall on their Heads. It is very true, *said I*, the Inventer of the third Systeme, I told you t'other

night, the famous *Tycho Brahe*, (one of the greatest Astronomers that ever was,) did not apprehend the least danger from an Eclipse, when every body else was under the greatest Consternation; yet this great Man had as an unaccountable a fear, did a Hare cross him, or were the first Person he met in a Morning an old Woman, home presently went *Tycho Brahe*, he shut himself up for that Day, and would not meddle with the least Business.

Let us go on with ours tho', *says the Countess*, and leave *Tycho Brahe* to defend his Superstition. Pray tell me, if the Earth be so little in comparison of *Jupiter*, whether his Inhabitants do discover us? Indeed, *said I*, I believe not: For if we appear to him ninety times less than he appears to us; judge you if there be any possibility: Yet this we may reasonably conjecture, that there are Astronomers in *Jupiter*, that after they have made the most curious Telescopes, and taked the cleerest Night for their observations, they may have discover'd a little

Planet

Planet in the Heavens, which they never saw before; if they publish their discovery, most People know not what they mean, or laugh at 'em for Fools; nay, the Philosophers themselves will not believe 'em, for fear of destroying their own opinions; yet some few may be a little curious; they continue their Observations, discover the little Planet again, and are now assur'd it is no Vision; then they conclude it hath a Motion round the Sun, which it compleats in a Year, and at last, (thanks to the Learned,) they know in *Jupiter* our Earth is a World, every body runs to see it at the end of the Telescope, tho' 'tis so little, 'tis hardly discover'd.

It must be pleasant, *says she*, to see the Astronomers of both Planets, levelling their Tubes at one another, like two Files of Musqueteers, and mutually asking, What World is that? What People inhabit it? Not so fast neither, *I reply'd*, for tho' they may from *Jupiter* discover our Earth, yet they may not know us; that is, they may not have

the least suspition it is inhabited; and should any one there chance to have such a fancy, he might be sufficiently ridicul'd, if not prosecuted for it; for my part, I believe they have work enough to make discoveries on their own Planet, not to trouble their Heads with ours; and had Sir *Francis Drake* and *Columbus* been in *Jupiter*, they might have had good Employments; why, I warrant you, they have not yet discover'd the hundredth part of their Planet; when *Mercury* is so little, they are all (as it were) near Neighbours, and 'tis but taking a walk, to go round that Planet. But if we do not appear to 'em in *Jupiter*, they cannot certainly discover *Venus* and *Mercury*, which are much less than the Earth, and at a greater distance; but in lieu of it, they see *Mars*, their own four Moons, and *Saturn*, with his; this I think is work enough for their Astronomers; and Nature hath been so kind to conceal from 'em the rest of the Universe. Do you think it a favour then, *says she*? Yes, certainly, *said I*, for there are sixteen

Planets in this great Vortex. Nature saves us the trouble of studying the Motions of 'em all, and shows us but seven, which I think is very obliging, tho' we know not how to value the kindness, for we have recover'd the other nine which were hid from us, and so render'd the Science of Astronomy much more difficult than Nature design'd it.

If there are sixteen Planets, *says she*, *Saturn* must have five Moons. 'Tis very true, *said I*, and two of these five, are but lately discover'd; but there is somewhat that is more remarkable, since his Year is thirty of ours, there are consequently in him some Countreys, where there Night is fifteen Years long; and what can you imagine Nature hath invented to give Light, during so dreadful a Night? Why, she hath not only given *Saturn* five Moons, but she hath encompass'd him round with a great Circle or Ring, the which being plac'd beyond the reach of the shadow which the Body of that Planet casts, reflects the Light of the Sun continually on those

places where they cannot see the Sun at all.

I protest, *says the Countess*, this is very surprizing, and yet all is contriv'd in such great order, that it is impossible not to think but Nature took time to consider the necessities of all animate Beings, and that the disposing of these Moons was not a work of Chance, for they are only divided among those Planets which are farthest distant from the Sun, the Earth, *Jupiter*, *Saturn*; indeed it was not worth while to give any to *Mercury* or *Venus*, they have to much light already; and they account their Nights (as short as they are) a greater blessing than their Day. But pray, why has not *Mars* a Moon too? It seems he has none, tho' he is much farther than the Earth from the Sun. It is very true, *said I*; no doubt but he hath other helps, tho' we do not know em: You have seen the *Phosphorus*, both liquid and dry, how it receives and imbibes the Rays of the Sun, and what a great Light it will cast in a dark Place; Perhaps *Mars* hath many

great

great high Rocks, which are so many natural *Phosphorus's*, which in the Day take in a certain provision of Light, and return it again at Night. What think you, Madam, is it not very pleasant when the Sun is down to see those lighted Rocks, like so many Illuminations at a Birth Day Night? Besides, there is a kind of Birds in *America*, that yields such a Light, you may read by it in the darkest Night; and who knows but *Mars* may have great flocks, of these Birds, that as soon as it is Night, disperse themselves into all parts, and spread from their wings another Day.

I am not at all contented, *says she*, with your Rocks, or your Birds; 'tis a pretty fancy indeed, but 'tis a sign that there should be Moons in *Mars*, since Nature hath given so many to *Saturn*, and *Jupiter*; and if all the other Worlds that are distant from the Sun, have Moons, why should *Mars* only be excepted? Ah, Madam, *said I*, when you are a little more dip'd in Philosophy, you will find exceptions in the very best Systemes; there are always some things that agree extreme

well, but then there are others that do not accord at all; those you must leave as you found 'em, if ever you intend to make an end: We will do so by *Mars*, if you please, and say no more of him; but return to *Saturn*. What do you think of his great Ring, in the form of a Semi-Circle, that reaches from one end of the Horizon to the other, which reflecting the light of the Sun, performs the Office of a continual Moon. And must we not inhabit this Ring too, *says she*? I confess, *said I*, in the humour I am in, I could almost send Colonies every where; and yet I can't well plant any there, it seems so irregular an Habitation; but for the five little Moons, they cannot chuse but be inhabited; tho' some think this Ring is a Circle of Moons, which follow close to one another, and have one equal Motion; and that the five little Moons fell out of this Circle; how many Worlds are there then in the Vortex of *Saturn*? But let it be how it will, the People in *Saturn* live very miserably: 'Tis true, this Ring gives light to 'em, but it must

be

be a very poor one, when the Sun seems to 'em but a little pale Star, whose Light and Heat cannot but be very weak at so great a distance; they say *Greenland* is a perfect *Bagnio* in comparison of that Planet, and that they would expire with Heat in our coldest Countries.

You give me, *says she*, such an Idea of *Saturn*, that makes me shake with cold, and that of *Mercury*, puts me into a feaver. It cannot be otherwise, *I reply'd*, for the two Worlds, which are the extremities of this great Vortex, must be opposite in all things. They must then, *says she*, be very wise in *Saturn*, for you told me they were all Fools in *Mercury*. If they are not wise, *said I*, yet they have all the appearances of being very Flegmatick: They are People that know not what 'tis to laugh, they take a days time to answer the least question you can ask 'em; and are so very grave, that were *Cato* living among 'em, they would think him a *merry Andrew*.

It is odd to consider, *says she*, that the Inhabitants of *Mercury* are all Life, and the Inhabitants of *Saturn* quite contrary; but

but among us, some are brisk, and some are dull; it is I suppose, because our Earth is plac'd in the middle of the other Worlds, and so we participate of both extremes, there is no fix'd or determin'd Character; some are made like the Inhabitants of *Mercury*, some like those of *Saturn*; we are a mixture of the several kinds that are found in the rest of the Planets. Why, *said I*, do you not approve of the Idea? Methinks it is pleasant to be compos'd of such a fantastical Assembly, that one would think we were collected out of different Worlds; we need not travel, when we see the other Worlds in Epitome at home.

I am sure, *says the Countess*, we have one great convenience in the situation of our World; it is not so hot as *Mercury* or *Venus*, nor so cold as *Jupiter* or *Saturn*; and our Country is so justly plac'd, that we have no excess either of Heat or Cold. I have heard of a Philosopher, who gave thanks to Nature that he was born a Man, and not a Beast, a *Greek*, and not a *Barbarian*; and for my

my part, I render thanks that I am seated in the most temperate Planet of the Universe, and in one of the most temperate Regions of that Planet. You have more reason, *said I*, to give thanks that you are Young, and not Old; that you are Young and Handsome, and not Young and Ugly; that you are Young, Handsome, and an *English* Woman, and not Young, Handsome, and a *Spaniard*, or an *Italian*; these are other gutts Subjects for your thanks, than the Situation of your Vortex, or the Temperature of your Countrey.

Pray Sir, *says she*, let me give thanks for all things, to the very Vortex in which I am planted: Our proportion of Happiness is so very small, that we should lose none, but improve continually what we have, and be grateful for every thing, tho' never so common or inconsiderable. If nothing but exquisite pleasure will serve us, we must wait a long time, and be sure to pay too dear for it at last. I wish, *said I*, that Philosophy was the pleasure you propose, that when you think of

Vortex's

Vortex's you would not forget an humble Servant of your Ladyships. I esteem it a pleasure, *says she*, while it diverts innocently, but no longer. I will engage for it till to morrow, *I reply'd*, for the fix'd Stars are beyond what you have yet seen.

The Fifth Evening.

THE Countess was very impatient to know what would become of the fix'd Stars, are they inhabited, *says she*, as the Planets are, or are they not inhabited? What shall we do with 'em? You may soon guess, *said I*, the fix'd Stars cannot be less distant from the Earth than fifty millions of Leagues, nay, if you anger an Astronomer, he will set 'em further. The distance from the Sun to the farthest Planet, is nothing in comparison of the distance from the Sun, or from the Earth, to the fix'd Stars, it is almost beyond Arithmetick. You see their light

a bright and shining, and did they receive it from the Sun, it must needs be very weak after a passage of fifty millions of Leagues; then judge how much it is wasted by reflection; for it comes back again as far to us; so that forwards and backwards, here are an hundred millions of Leagues for it to pass; and it is impossible it should be so clear and strong as the light of a fix'd Star, which cannot but proceed from it self; so that in a word, all the fix'd Stars are so many Suns.

I perceive, *says the Countess*, where you would carry me; you are going to tell me, that if the fix'd Stars are so many Suns, and our Sun the Centre of a Vortex that turns round him, why may not every fix'd Star be the Centre of a Vortex that turns round the fix'd Star? Our Sun enlightens the Planets; why may not every fix'd Star have Planets to which they give light? You have said it, *I reply'd*, and I will not contradict you.

You have made the Universe so large, *says she*, that I know not where I am, or what

what will become of me; what is it all to be divided into heaps confusedly, one among another? Is every Star the Centre of a Vortex, as big as ours? Is that vast space which comprehends our Sun and Planets, but an inconsiderable part of the Universe? and are there as many such spaces, as there are fix'd Stars? I protest it is dreadful. Dreadful, Madam, *said I*; I think it very pleasant, when the Heavens were a little blue Arch, stuck with Stars; methought the Universe was too strait and close, I was almost stifled for want of Air, but now it is enlarg'd in heigth and breadth, and a thousand and a thousand Vortex's taken in; I begin to breath with more freedom, and think the Universe to be incomparably more magnificent than it was before. Nature hath spar'd no cost, even to profuseness, and nothing can be so glorious, as to see such a prodigious number of Vortex's, whose several centres are possess'd by a particular Sun, which makes the Planets turn round it. The Inhabitants of a Planet of one of these innumerable Vortex's, see on all sides

ſides theſe luminous Centres of the Vortex, with which they are encompaſs'd; but perhaps they do not ſee the Planets, who receiving but a faint Light from their Sun, cannot ſend it beyond their own World.

You preſent me with a kind of Perſpective of ſo vaſt a length, that no Eye can reach to the end of it: I plainly ſee the Inhabitants of the Earth, and you have made me diſcover thoſe that dwell in the Moon, and in other Planets of our Vortex; but theſe indeed I do not ſee ſo clearly as thoſe of the Earth; after theſe, we come to the Inhabitants of the Planets which are in other Vortex's, but they are ſunk into ſo great a depth, that tho' I do all I can to ſee them, yet I muſt confeſs I can hardly preceive 'em: by the expreſſion you uſe in ſpeaking of 'em, they ſeem to be almoſt annihilated: you ought then to call 'em the Inhabitants of one of thoſe innumerable Vortex's: We our ſelves, for whom the ſame expreſſion ſerves, muſt confeſs, that we ſcarce know where we are, in the midſt

of

of so many Worlds; for my own part, I begin to see the Earth so fearfully little, that I believe from henceforth, I shall never be concern'd at all for any thing: That we so eagerly desire to make our selves great, that we are always designing, always troubling and harassing our selves, is certainly because we are ignorant what these Vortex's are; but now I hope my new Lights will in part justifie my laziness, and when any one reproaches me with my carelessness, I will answer, *Ah did you but know what the fix'd Stars are!* It was not fit, *said I*, that *Alexander* should know what they were; for a certain Author who maintains that the Moon is inhabited, very gravely tells us, that *Aristotle*, (from whom no truth could be long conceal'd) must necessarily be of an opinion, back'd with so much reason; but yet he would never acquaint *Alexander* with the secret, fearing he might run mad with despair, when he knew there was another World, which he could not Conquer; with much more reason than was this mystery of Vortex's

and

and fix'd Stars kept secret in *Alexander*'s time; for tho' they had been known in those Days, yet a Man would have been a great Fool, to have said any thing of 'em to *Alexander*; it hath been but an ill way of making his Court to that Ambitious Prince; for my part, I that know 'em, am not a little troubled to find my self not one jot the wiser for all the knowledge I have of 'em; the most they can do, according to your way of reasoning, is but to cure People of their Ambition, and their unquiet restless humour, which are Diseases I am not at all troubled with; I confess, I am guilty of so much weakness, as to be in love with what is beautiful; that's my distemper, and I am confident, the Vortex's can never cure it; What if the other Worlds render ours so very little? They cannot spoil fine Eyes, or a pretty Mouth; their value is still the same, in spite of all the Worlds that can possibly exist!

This Love, *reply'd the Countess*, smiling, is a strange thing; let the World go how 'twill, 'tis never in danger; there

is no Systeme can do it any harm. But tell me freely, is your Systeme true? Pray conceal nothing from me; I will keep your secret very faithfully: it seems to have for its foundation, but a slight probability; which is, that if a fix'd Star be in it self a luminous Body, like the Sun, then by consequence, it must, as the Sun is, be the Centre and Soul of a World; and have its Planets turning round about it: But is there an absolute necessity it must be so? Madam, *said I*, since we are in the humour of mingling amorous Follies with our most serious Discourses, I must tell you, that in Love and the Mathematicks People reason alike: Allow never so little to a Lover, yet presently after you must grant him more; nay, more and more, which will at last go a great way: In like manner grant but a Mathematician one little Principle, he immediately draws a consequence from it, to which you must necessarily assent; and from this consequence another, till he leads you so far (whether you will or no) that you have

much ado to believe him. These two sorts of People, Lovers and Mathematicians, will always take more than you give 'em. You grant that when two things are like one another in all those things that appear to you, it is possible they may be like one another in those things that are not visible, if you have not some good reason to believe otherwise: Now this way of arguing have I made use of. The Moon, *say I*, is inhabited, because she is like the Earth; and the other Planets are inhabited, because they are like the Moon; I find the fix'd Stars to be like our Sun, therefore I attribute to them what is proper to that: You are now gone too far to be able to retreat, therefore you must go forward with a good grace. But, *says the Countess*, if you build upon this resemblance or likeness which is between our Sun and the fix'd Stars, then, to the People of another great Vortex, our Sun must appear no bigger than a small fix'd Star, and can be seen only when 'tis Night with them. Without doubt, Madam, *said I*, it must

be so: Our Sun is much nearer to us, than the Suns of other Vortex's, and therefore its Light makes a much greater impression on our Eyes, than theirs do: We see nothing but the Light of our own Sun, and when we see that, it darkens and hinders us from seeing any other Light: but in another great Vortex there is another Sun, which Rules and Governs, and, in its turn extinguisheth the Light of our Sun, which is never seen there, but in the Night, with the rest of the other Suns, that is the fix'd Stars; with them our Sun is fastned to the great arched Roof of Heaven, where it makes a part of some Bear or Bull: For the Planets which run round about it, (our Earth for Example) as they are not seen at so vast a distance, so no body doth so much as dream of 'em: All the Suns then are Day-Suns in their own Vortex's, but Night-Suns in other Vortex's: In his own World or Sphere every Sun is single, and there is but one to be seen; but every where else, they serve only to make a number. May not the Worlds, *reply'd the Countess*, notwith-

notwithstanding this great resemblance between 'em, differ in a thousand other things; for tho' they may be alike in one particular, they may differ infinitely in others.

It is certainly true, *said I*; but the difficulty is to know wherein they differ. One Vortex hath many Planets that turn round about its Sun; another Vortex hath but a few: In one Vortex, there are inferiour or less Planets, which run about those which are greater; in another perhaps, there are no inferiour Planets; here, all the Planets are got round about their Sun, in form of a little Squadron; beyond which, is a great void space, which reacheth to the neighbouring Vortex's: In another place, the Planets take their course towards the out-side of their Vortex, and leave the middle void. There may be Vortex's also quite void, without any Planets at all; others may have their Sun not exactly in their Centre; and that Sun may so move, as to carry its Planets along with it: Others may have Planets which, in regard of their Sun, a-

ſcend and deſcend, according to the change of their Equilibration, which keeps them ſuſpended. But I think I have ſaid enough for a Man that was never out of his own Vortex.

It is not ſo much, *reply'd the Counteſs*, conſidering what a multitude of Worlds there are; what you have ſaid is ſufficient but for five or ſix, and from hence I ſee thouſands.

What, Madam, would you ſay, if I ſhould tell you, there are many more fix'd Stars than thoſe you ſee? And that an infinite number are diſcover'd with Glaſſes, which never ſhew'd themſelves to our Eyes: In only one Conſtellation, where it may be, we count twelve or fifteen, there are as many to be found as uſually appear in the whole Hemiſphere.

I ſubmit, *ſays the Counteſs*, and beg your pardon: You quite confound me with Worlds and Vortex's. I have yet more to tell you, Madam, *ſaid I*: You ſee that whiteneſs in the Sky, which ſome call the *Milky-Way*; Can you imagine what that is? 'Tis nothing but an infini-

ty of small Stars, not to be seen by our Eyes, because they are so very little; and they are sown so thick, one by another, that they seem to be one continu'd whiteness: I wish you had a Glass, to see this Ant-hill of Stars, and this Cluster of Worlds, if I may so call 'em: They are in some sort, like the *Maldavian* Islands: those twelve thousand banks of Sand, separated by narrow Channels of the Sea, which a Man may leap as easily, as over a Ditch; So near together are the Vortex's of the *Milky-Way*, that the People in one World, may talk, and shake Hands with those of another; at least I believe, the Birds of one World, may easily fly into another; and that Pigeons may be train'd up to carry Letters, as they do in the *Levant*. These little Worlds are excepted out of that general Rule, by which one Sun in his own Vortex, as soon as he appears, effaceth the Light of all other foreign Suns: If you were in one of these little Vortex's of the *Milky-Way*, your Sun would not be much nearer to you, and consequently, would not make any much

greater sensible impression on your Eyes, than a hundred thousand other Suns of the neighbouring Vortex's: You would then see your Heaven shine bright with an infinite number of Fires, close to one another, and but a little distant from you; so that tho' you should lose the Light of your own particular Sun, yet there would still remain visible Suns enough beside your own, to make your Night as Light as Day, at least, the difference would hardly be perceiv'd, for the truth is, you would never have any Night at all: The Inhabitants of these Worlds accustom'd to perpetual Brightness, would be strangely astonish'd, if they should be told that there are a miserable sort of People, who where they live, have very dark Nights, and when 'tis Day with them, they never see more than one Sun; certainly they would think Nature had very little kindness for us, and would tremble with horrour, to think what a sad condition we are in.

I do not ask you, *said the Countess*, whether in those Worlds of the *Milky-Way*,

Way, there be any Moons; I see they would be of no use to those principal Planets which have no Night, and move in spaces too strait and narrow to cumber themselves with the baggage of inferiour Planets: Yet pray take notice, that by your liberal multiplication of Worlds, you have started an objection, not easily answer'd: The Vortex's whose Suns we see, touch the Vortex in which we are, and if it be true, that Vortex's are round, how then can so many Bowls or Globes all touch one single one? I would fain imagine how this may be done, but cannot think which way.

You shew a great deal of Wit, Madam, *said I*, in raising this doubt, and likewise in not being able to resolve it; for in it self the thing is extreme difficult, and in the manner you conceive it, no answer can be given to it; and he must be a Fool who goes about to find Answers to Objections which are unanswerable. If our Vortex had the form of a Die, it would have six squares or flat faces, and would be far from being round,

and

and upon every of these Squares, might be plac'd a Vortex of the same Figure, but if instead of these six Square Faces, it had twenty, fifty, or a thousand; then might a thousand Vortex's be plac'd upon it, one upon every flat; and you know very well, that the more flat Faces any body hath on its outside, the nearer it approacheth to roundness, just as a Diamond cut facet-wise on every side, if the facets be very many and little, it will look as round as a Pearl of the same bigness: 'Tis in this manner that the Vortex's are round; they have an infinite number of facets on their out-side, and every one of 'em hath upon it another Vortex; these faces are not all equal and alike; but here, some are greater, and there, some less; The least facets of our Vortex, for Example, answer to the *Milky-Way*, and sustain all those little Worlds. When two Vortex's are supported by the two next flats on which they stand, if they leave beneath any void space between them, as it must often happen, Nature, who is an excellent Huswife,

Huswife, and suffers nothing to be useless, presently fills up this void space with a little Vortex or two, perhaps with a thousand, which never incommode the others, and become one, two, or a thousand Worlds more; so that there may be many more Worlds than our Vortex hath flat Faces to bear 'em: I will lay a good wager, that tho' these little Worlds were made only to be thrown into the corners of the Universe, which otherwise would have been void and useless; and tho' they are unknown to other Worlds which they touch, yet they are well satisfy'd with their being where they are: These are the little Worlds, whose Suns are not to be discover'd but with a Telescope, and whose number is prodigious: To conclude, all these Vortex's are joyn'd to one another in so admirable a manner, that every one turns round about his Sun, without changing place; every one hath such a turn as is most easie, and agreeable to its own Situation: They take hold of one another, like the Wheels of a Watch, and mutually help one anothers

Motion:

Motion: And yet 'tis true, that they act contrary to one another. Every World, as ſome ſay, is like a Foot-ball, made of a Bladder, cover'd with Leather, which ſometimes ſwells of its own accord, and would extend it ſelf, if it were not hindred. But this ſwelling World being preſs'd by the next to it, returns to its firſt Figure; then ſwells again, and is again depreſt; and ſome affirm that the reaſon why the fix'd Stars give a twinkling and trembling Light, and ſometimes ſeem not to ſhine at all, is becauſe their Vortex's perpetually puſh and preſs our Vortex, and ours again continually repulſeth theirs.

I am in love with theſe Fancies, *ſaid the Counteſs*; I am pleas'd with theſe Foot-balls, which ſwell every moment, and ſink again, and with theſe Worlds, which are continually ſtriving and puſhing one another: But above all, I am pleas'd to ſee how this juſtling keeps up the trade of Light, which is certainly the only correſpondence that is between them.

No,

No, no, Madam *said I*; Light is not their sole commerce; the Neighbouring Worlds sometimes send Visits to us, and that in a very magnificent and splendid manner: There come Comets to us from thence, adorn'd with Bright shining Hair, Venerable Beards, or Majestick Tails; these, *said the Countess*, are Ambassadours, whose Visits may be well spared, since they serve only to affright us. They scare only Children, *said I*, with their extraordinary train; but indeed, the number of such Children is now-a-days very great. Comets are nothing but Planets, which belong to a Neighbouring Vortex, they move towards the out-side of it; but perhaps this Vortex being differently press'd by those Vortex's which encompass it, it is rounder above than it is below, and it is the lower part that is still towards us. These Planets which have begun to move in a Circle above, are not aware that below their Vortex will fail 'em, because it is as it were broken. Therefore to continue the Circular Motion, it is necessary

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that they enter into another Vortex, which we will suppose is ours, and that they cut through the outsides of it. They appear to us very high, and are much higher than *Saturn*, and according to our System, it is absolutely necessary they should be so high, for Reasons that signifie nothing to our present subject. From *Saturn* downwards to the outsides of our Vortex, there is a great void space without any Planets. Our Adversaries often ask us, to what purpose this void space serves? But let them not trouble themselves any more, I have found an use for it. 'Tis the Apartment of those strange Planets, which come into our World.

I understand you, *says she*, we do not suffer them to come into the heart of our Vortex, among our own Planets, but we receive them as the *Grand Seignior* doth the Ambassadours that are sent to him; he will not shew them so much respect as to let 'em Lodge in *Constantinople*, but Quarters 'em in one of the Suburbs of the City. Madam, *said I*, we

we, and the *Ottomans* agree likewise in this, that as they receive Ambassadours, but never send any, so we never send any of our Planets into the Worlds that are next us.

By this, *says she*, it appears that we are very proud, however I do not yet very well know what I am to believe. These Foreign Planets with their Tails and their Beards have a terrible Countenance, it may be they be sent to affront us; but ours that are of another make, if they should get into other Worlds, are not so proper to make people afraid.

Their Beards and their Tails Madam, *said I*, are not real, they are *Phænomena*, and but meer Appearances. These Foreign Planets differ in nothing from ours, but entring into our Vortex, they seem to us to have Tails or Beards, by a certain sort of Illumination which they receive from the Sun, and which hath not been yet well explain'd. But certain it is, that 'tis but a kind of Illumination, and when I am able I will tell

tell you how 'tis done. I wish then, *says she*, that our *Saturn* would go take a Tail or a Beard in another Vortex, and affright all the Inhabitants of it. That done, I would have him come back again, leaving his terrible Accoutrements behind him, and taking his usual place amongst our other Planets, fall to his ordinary business. 'Tis better for him, *said I*, not to go out of our Vortex. I have told you how rude and violent the Shock is, when two Vortex's justle one another, a poor Planet must needs be terribly shaken, and its Inhabitants in no better condition. We think our selves very unhappy when a Comet appears, but 'tis the Comet that is in an ill case. I do not believe that, *says she*, it brings all its Inhabitants with it in very good health; there can be nothing so diverting as to change Vortex's. We that never go out of our own, lead but a dull Life; if the Inhabitants of a Comet had but the wit to foresee the time when they are to come into our World, they that had already made the Voyage would

would tell their Neighbours before-hand what they ſhould ſee, they would tell them, that they would diſcover a Planet with a great Ring about it, meaning our *Saturn*, they would alſo ſay, you ſhall ſee another Planet which hath four little ones to wait on it; and perhaps ſome of them, reſolv'd to obſerve the very Moment of their entring into our World, would preſently cry out, *A New Sun, a New Sun*, as Sailors uſe to cry, *Land, Land.*

You have no reaſon then, *ſaid I*, to pity the Inhabitants of a Comet, yet I ſuppoſe you will think their Condition lamentable, who inhabit a Vortex whoſe Sun comes in time to be quite extinguiſhed, and conſequently live in Eternal Night. How? *cry'd the Counteſs*, can Suns be put out? Yes, without doubt *ſaid I*, for People ſome thouſand Years ago ſaw fix'd Stars in the Sky, which are now no more to be ſeen; theſe were Suns which have loſt their Light, and certainly there muſt be ſtrange Deſolation in their Vortex's, and a general Morta-

lity over all the Planets, for what can People do without a Sun? This is a dismal Fancy, *said the Countess*, I would not if I could help it, let it come into my head. I will tell you if you please, *I reply'd*, what in this particular is the Opinion of Learned Astronomers. They think that the fix'd Stars which have disappear'd, are not quite extinguish'd, but that they are half Suns, that is, they have one half Dark, and the other half Light, and turning round upon their own Axis or Centre, they sometimes shew us their Light side, and afterwards turning to us their Dark side, we see them no more. To oblige you, Madam, I will be of this Opinion, because it is not so harsh as the other, but I cannot make it good, but in relation to some certain Stars, because as some have lately observed, those Stars have their Regulated times of appearing, and disappearing, otherwise there could be no such thing as half Suns. But what shall we say of Stars, which totally disappear, and never shew themselves again after they have

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finish'd their Course of turning round upon their own Axis? You are too just, Madam, to oblige me to believe that such Stars are half Suns. However I will try once more what I can do in favour of your Opinion; the Suns are not extinct; they are only sunk so low into the immense depth of Heaven, that we cannot possibly see them, in this Case the Vortex follows his Sun and all's well again. 'Tis true that the greatest part of the fix'd Stars have not this Motion, by which they remove themselves so far from us, because at other times they might return again nearer to us, and we should see them sometimes greater, and sometimes less, which never happens. But we will suppose that none but the Little, Light, and most Active Vortex's which slip between the others make certain Voyages, after which they return again, while the main Body of Vortex's remain unmov'd. 'Tis likewise very strange that some fix'd Stars shew themselves to us, spending a great deal of time in appearing and disappearing, and at last,

totally and entirely disappear. Half Suns would appear again at their set and regulated time. Now, Madam, boldly declare your Opinion; Must not these Stars of necessity be Suns which are so much darkned as to be visible to us, yet afterwards shine again, and at last are wholly extinct? How can a Sun, *said the Countess*, be darkned, and quite extinguish'd, when it is in its own Nature a Fountain of Light? It may be done, Madam, *said I*, with all the ease in the World, if *Descartes* Opinion be true, that our Sun hath Spots; now whether these Spots be Scum or thick Mists, or what you please, they may thicken and unite, till at last they cover the Sun with a Crust, which daily grows thicker, and then Farewell Sun. We have hitherto scap'd pretty well; but 'tis said, that the Sun for some whole Years together hath look'd very pale; for Example, the Year after *Cæsar's* death; it was this Crust that then began to grow, but the force of the Sun broke and dissipated it; had it continued, we had been all lost People. You make me tremble,

tremble, *reply'd the Countess*; and now I know the fatal consequences of the Sun's paleness, I believe, instead of going every morning to my Glass, to see how I look, I shall cast my Eyes up to Heaven, to see whether or no the Sun looks pale. Oh, Madam, *said I*, there is a great deal of time required to ruine a World. Grant it, *said she*, yet 'tis but time that is required. I confess it, *said I*; all this immense mass of Matter that composes the Universe, is in perpetual Motion, no part of it excepted; and since every part is moved, you may be sure that changes must happen sooner or later; but still in times proportioned to the Effect. The Ancients were pleasant Gentlemen, to imagine that the Celestial Bodies were in their own Nature unchangeable, because they observed no change in them; but they did not live long enough to confirm their Opinion by their own Experience; they were Boys in comparison of us. Give me leave, Madam, to explain my self by an Allegory: If Roses, which last but a Day, could

could write Histories, and leave Memoirs one to another; and if the first Rose should draw an exact Picture of their Gardiner, and after fifteen thousand Rose-Ages, it should be left to other Roses, and so left still to those that should succeed, without any change in it; should the Roses hereupon say, we have every Day seen the same Gardiner, and in the memory of Roses, none ever saw any Gardiner but this; he is still the same he was, and therefore certainly he will never die, as we do; for there is no change at all in him. Would not those Roses, Madam, talk very foolishly? And yet there would be more reason in their discourse, than there was in what the Ancients said concerning Celestial Bodies; and tho' even to this very Day there should appear no visible Change in the Heavens, and the matter of which they are made, should have all the signs of an eternal duration without any Change; yet I would not believe 'em unchangeable, till I had the experience of many more Ages. Ought we, who last but a moment, make our continuance

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the measure of any other things duration; 'tis not so easie a matter to be Eternal. To have lasted many Ages of Men, one after another, is no sign of Immortality. Truly, *says the Countess*, I find the Worlds are far from being able to pretend to it; I will not do 'em so much honour, as to compare 'em to the Gardiner that lived so much longer than the Roses: I begin to think 'em like the Roses themselves, which blow one Day, and die the next: For now I understand, that if old Stars disappear, new ones will come in their room, because every species must preserve it self. No species, Madam, *said I*, can totally perish; some perhaps will tell you, that such new Stars are Suns, which return to our sight again, after they have been a long time hid from us, in the profundity of Heaven: Others may tell you, they are Suns cleared from that thick Crust, which once covered them: If I should think all this possible, yet I likewise believe that the Universe may be framed in such a manner, that from time to time it may produce new Suns; why may not that matter which is proper to make a Sun, be dispers'd here and there, and gather it self again at long run, into one certain place, and lay the foundation of a new World? I am very much inclin'd to believe such new Productions, because they suit with that glorious and admirable Idea which I have

of

of the Works of Nature. Can we think that with Nature knows no more than the secret of making Herbs and Plants live and die by a continual revolution? I am verily perswaded, and are not you so too, Madam? That Nature, without much cost or pains can put the same power in practice, upon the Worlds. I now find, *says the Countess*, the Worlds, the Heavens and Celestial Bodies so subject to change, that I am come to my self again. To come the better again to our selves, *I reply'd*, let us say no more of these Matters. We are arrived at the very roof and top of all the Heavens; and to tell you whether there be any Stars beyond it, you must have an abler Man than I am; you may place Worlds there, or no Worlds, as you please: 'Tis the Philosopher's Empire to describe those vast invisible Countries, which are, and are not, or are such as he pleases to make them. It is enough for me, to have carried your mind as far as you can see with your Eyes.

Well, *says the Countess*, I have now in my Head, the System of the Universe: How learned am I become! Indeed, Madam, *said I*, you are pretty knowing, and you are so with the advantage of believing, or not believing any thing I have said. For all my pains, I only beg this favour that whenever you see the Sun, the Heaven, or the Stars, you will think of me.

FINIS.